

# Reconciling the Public Land Surveying Records in Minnesota

## Final Report

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## **Executive Summary**

A variety of records were produced during the 60 years the public land surveys were being carried out in Minnesota. Each record possesses a different value for anyone interested in historical reconstruction; those wanting to reconstruct lines, to reestablish corner monuments, or to reconstruct the plant cover at the time the surveys were made, or those wanting to understand the influence of the surveys on the modern landscape. Treating them anecdotally, that is, in their singularity – as a piece of information with little relationship to the information in any other records – may not be the best way to treat them. Users of the township plats, and the volumes of field notes from which the plats were constructed, may not know anything about how they were produced and thus may not be aware of their limitations as a source of information. There is a need to look at all the documents that, taken together, portray the surveying process under which particular deputies operated to produce the data in the field notes that is graphically portrayed on the plats.

Although each record contains information that is unique, each is connected, sometimes distantly sometimes intimately, to all other records containing different information produced during the surveying process. In fact one record, or perhaps one piece of information in a document in one record collection, may be related to some other piece of information in another document in another record collection. In such cases, the information in one record is limited by the information in the other records. All surveying records are inextricably linked in a paper network that described how the deputies carried out the surveying duties defined in their contracts and instructions and how the federal government ensured the work was completed satisfactorily. All are related, in fact, to individual deputies working under the provisions of a particular contract awarded at a particular date, following specific instructions and working in a particular area, work that eventually resulted in field notes – describing what had been done.

This report focuses on the surveying process not a particular record or the details contained in the particular record but rather on the types of records available that allow anyone to understand the work of a particular deputy running a particular line segment under a particular contract. Understanding this process should allow the modern land surveyors to carry out their work more effectively; county surveyors in Minnesota to better fulfill their statutory obligations to maintain the existing corners and to reconstruct those that have been lost or obliterated, MnDOT land management division to acquire and manage land with a broader knowledge base, and private surveyors to work with added confidence.

The project builds on the two earlier projects funded by MnDOT, one focusing on the special instructions under which the deputies carried out their work (Squires, 2008) and one focusing on the contracts awarded to the deputies that were located in the Minnesota Historical Society (MHS) collections (Squires, 2012). It also builds on my extensive work on the public land surveys in Minnesota, part of which is contained in the book “A Striking Triumph of Geometry over Physical Geography: Vignettes of the Public Land Surveys. (Squires 2010) Here I describe the records currently housed in the Minnesota Historical Society (MHS) collections at the Minnesota History Center created during the surveys made by a few deputies. The aim is to provide a list of documents that can be used not only to describe what several deputies did and why, documents that demonstrate the richness of material available to anyone interested in



understanding the surveying process, but also to provide the detail necessary for developing an electronic database containing all documents of relevance and utility to the modern surveyor envisioned by Krafthefer (2006). Paper chains, linking together the records contained in the MHS collections for several deputies show the relationships between the various records produced during the surveying process, illustrating what records were produced at every step.

These records, or rather the documents in the records, illustrate, quite comprehensively, what particular deputies did in carrying out specific surveying contracts in Minnesota. Although comprehensive, the story of these surveys is incomplete, in part because the MHS collections do not contain all of the records to which reference is made in the correspondence between the main players in the surveying process. Many letters, particularly those sent by the surveyor general to the Commissioner of the General Land Office, make reference to accompanying documents. The fact that these documents existed at one time and may still exist somewhere may, in many instances, be sufficient and there may be no need to actually see them. Scouring the Iowa archives, the National Archives, or even the Minnesota archives, for every document relating to the surveying process in Minnesota may not be worth the time and money because it may not provide additional historical evidence of the surveying process.

Perhaps attempting to give a complete picture of the public land surveying process in a sixty-year period, when the location of the administrative offices of the surveys in Minnesota changed, by compiling a comprehensive inventory of every document generated in the process, is inappropriate. There is a reasonable expectation that some documents were inevitably misplaced or lost. More importantly, perhaps, is the fact that each deputy possessed different experiences and skills when starting his contract, faced different challenges in his fieldwork and, most importantly, was allowed some discretion in completing his work. As a result, very few generalizations can be made about the public land surveys, at least on the basis of the documents described here, which clearly demonstrates that each surveying contract was unique. Collectively, the documents described here provide a reasonably complete picture of what a deputy did, and in doing so provide a template for the records informing the modern land surveyors, responsible retracing the lines and reconstructing and/or maintaining the corners established by the deputies, and the archivists, responsible for maintaining the surveying records and making them accessible.

## Chapter 1. Introduction

From 1847 until 1908, 387 deputy surveyors under contract with the federal government ran approximately 200,000 miles of intersecting north-south and east-west lines spaced a mile apart in Minnesota. Along these lines were placed approximately 300,000 wood, metal, concrete, and earthen monuments at half-mile intervals. And so were created rectangles of 36 square miles in area each of which was divided into one mile square containing 640 acres.<sup>1</sup> (Fig. 1.1) The sole purpose of this net was to provide a legal description of each parcel of land that the federal government would subsequently offer for sale. The surveys were an essential feature of the federal government's policy of privatizing land, providing the cadastral information that allowed the United State government to convey almost 50 million acres of Minnesota to individuals, to corporations, and to the State.

These rectangles represented the first impact of European Americans on the land surface in many parts of the United States. These cultural artifacts, called by Pattison (1964, 1), "a striking example of geometry triumphant over physical geography," created a lasting spatial organization in many parts of the United States, including Minnesota. As Pattison also noted at the conclusion of his seminal book Beginnings of the American Rectangular Land Survey System, 1784-1800, "Neither the friends nor the foes of the rectangular surveys system, in its early years, seem to have anticipated the great extent to which the gridded property lines would eventually determine land use patterns." (Pattison 1964, 231) The rectangular survey net is perhaps the most widely recognizable cultural feature of the United States landscape but, surprisingly, is one of the least understood.<sup>2</sup>

The beauty of the land survey...was that it made buying simple, whether by squatter, settler or speculator. The system gave every parcel of virgin ground a unique identity, beginning with the township. Within the township, the thirty-six sections were numbered ..., beginning with section 1 in the north-east corner, and continuing first westward then eastward, back and forth... And long before the United States Postal Service ever dreamed of zip codes, every one of these quarter-quarter sections had its own address, as in ¼ South-West, ¼ Section North-West, Section 8, Township 22 North, Range 4 West, Fifth Principal Meridian. (Linklater, 2002, 180-81 quoted in Libecap and Lueck, 2011 427)

The major characteristics of the rectangular grid are well-known, mainly through the influence of the lines on the modern land ownership and modern land use. In numerous instances roads, county boundaries, and even property boundaries coincide with the lines established well over a century ago. The actual corners, many of which have been perpetuated by county surveyors, still exist – although the original monuments have been replaced – and bearing trees, used to

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<sup>1</sup> The number of deputies was derived from the Bureau of Land Management General Land Office web site, which lists individuals but not partnerships. The miles of lines and numbers of corner monument are educated guesses.

<sup>2</sup> Surprising because the scarcity of scholarly treatments on the topic.

reference corner monuments, can sometimes be found.

These characteristics are the outcomes of a surveying process that is not well-known. Those interested in the surveys, wanting to reconstruct lines, to reestablish corner monuments, or to reconstruct the plant cover at the time the surveys were made, or merely to understand the influence of the surveys on the modern landscape, are usually familiar with a small portion of the surveying process, usually that portion giving rise to the particular records with which they are familiar. The township plats and the field notes, from which the plats were constructed, are well-known and much used but many users of these records do not know much about the process through which they were produced and thus are not aware of their limitations as a source of information. While particular records are extremely valuable for any reconstruction efforts, treating them anecdotally, that is, in their singularity – as a piece of information with little relationship to any other records containing other information – may be quite misleading. There is a need to look at all the documents that, taken together, portray the surveying process under which particular deputies operated to produce the data in the field notes that is graphically portrayed on the plats.

I have written about these records in such a way in several papers; the published annual reports of the surveyors general, the online collection of digital township plats, the field notebooks of the deputies, the contracts awarded to the deputies, and, several times, on the instructions given to the deputy surveyors. (Squires, 2008, 2009a, 2009b, 2010, 2012a, 2012b, 2012c) None of these individual records can adequately portray the public land surveys or the process that created them. All documents produced during a surveying process designed to subdivide the land surface of the United States efficiently and inexpensively into parcels of land that the federal government would then convey to individuals, states, and corporations should be used to characterize the surveys. As I have written elsewhere,

The administrative process created by federal legislation and General Land Office regulations, what affidavits were needed, what bonds executed, what approvals obtained, and, perhaps most importantly, how the deputies were paid, imposed specific requirements on both the Surveyor General and the deputies. In the final analysis the accuracy of the rectangular net was dependent upon the work of the deputies employed by the Surveyor General. The willingness and ability of competent surveyors to work for the federal government may have depended as much on the administrative requirements imposed on them as it did on those surveying requirements imposed by the specific contract, both of which characterized the federal bureaucracy. Individuals and partnerships that were competent, hence received multiple surveying contracts, were those who were temperamentally willing to fulfill officious requirements, work speedily, thus within the time specified in their contracts, and accurately. (Squires, 2010 137)

The surveying process produced a variety of records during the 60 years the surveys were being carried out in Minnesota. While some of these records have obvious importance to land surveyors, who have both a legal obligation to use them in their work under federal and

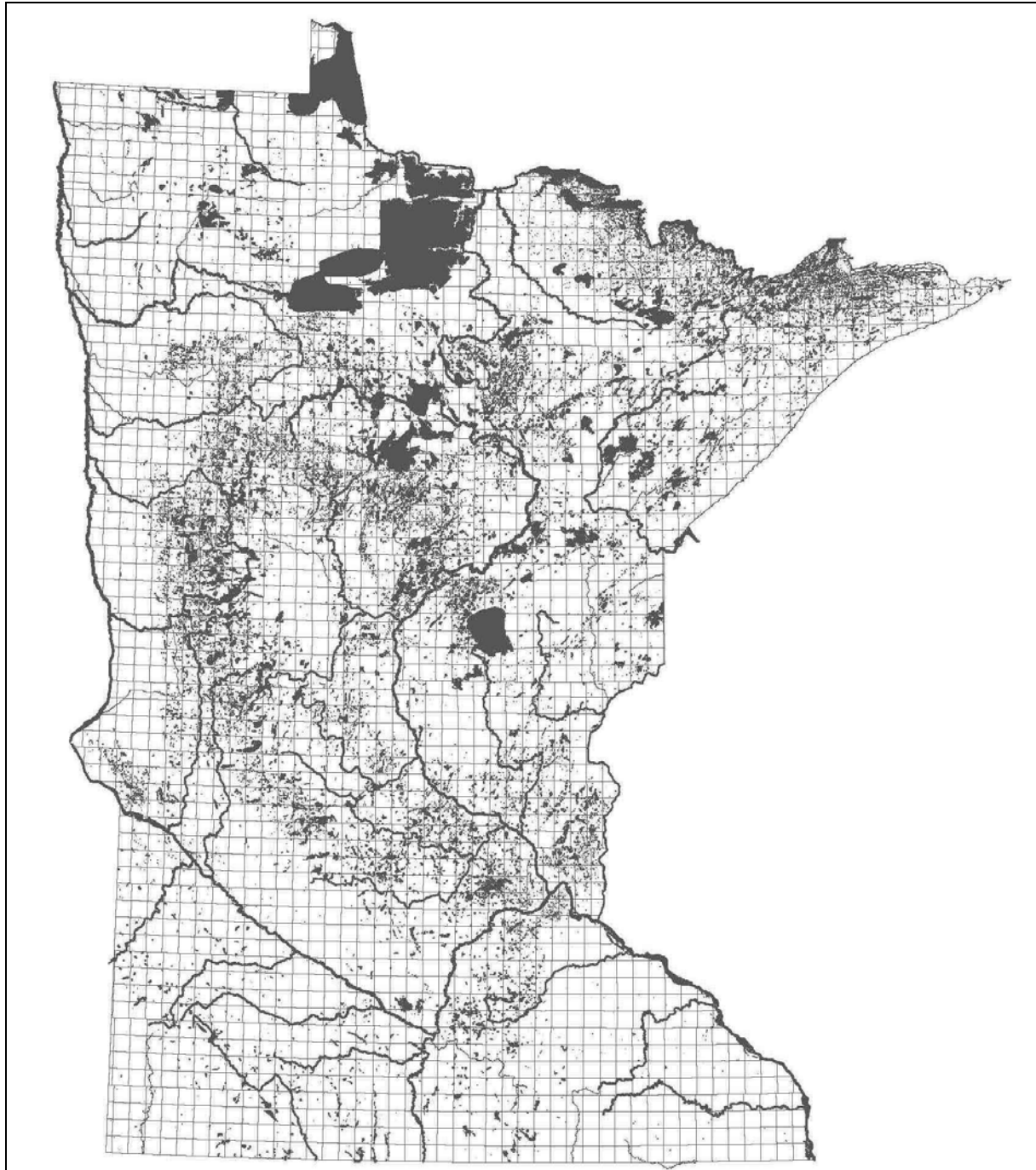


Figure 1.1 Public land survey townships in Minnesota.<sup>3</sup>

Minnesota law and a moral obligation under the code of professional conduct and best practices

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<sup>3</sup> Often called “Congressional” townships to distinguish them from the jurisdiction called “township,” they encompass 36 square miles or less when they abut water courses and state boundaries.

as well as individual ethical behavior, all of them deserve scrutiny.<sup>4</sup> They all reflect how the General Land Office administered the surveys, especially what records needed to be kept. Understanding some of this administration, moreover, means that we know where the records should be found.

All of the surveying records relate to individual deputies each working under the provisions of a particular contract awarded at a particular date, following specific instructions and working in a particular area, work that eventually resulted in field notes – describing what they had done. Each record, and indeed each piece of information in a document in one record collection, almost certainly is related to, and may depend upon, some other pieces of information in another document in another record collection. As I stated in a previous report,

All of the paper records produced during the federal government's land surveying efforts in Minnesota in the second half of the nineteenth century have lasting value. As a collection they describe the actual surveying process. Singly, they describe particular facets of that process. (Squires, 2008 3)

The work of individuals employed as deputy surveyors left several types of paper records, each of which reflect the role the deputies played in the surveying process. Those most used by the modern land surveyor, the township plats and the field notes, comprise two such records. But each plat and each volume of field notes is inextricably linked to other records in a paper network that describes not only how the deputies ran the lines and set the monument as they carried out the surveying duties under their contracts, but also describes the context in which they worked, portraying the office work that necessarily accompanied the actual fieldwork.

Understanding all surveying records should allow the modern land surveyors to carry out their work more effectively; county surveyors in Minnesota to fulfill their statutory obligations to maintain the existing corners and to reconstruct those that have been lost or obliterated, MnDOT land management division to acquire and manage land, and private surveyors to work with added confidence.<sup>5</sup>

This report focuses on the surveying process. It does not focus on particular records or the details contained in the particular records but rather on the types of records available that allow anyone looking at the work of a particular deputy running a particular line segment under a particular contract to know where to look for information about how the deputy worked.

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<sup>4</sup> The legal imperative is provided by federal and state statutes enforced, when necessary and in particular circumstances, by the courts. The records created during the surveying process were made of lasting legal relevance in the Land Act of February 11, 1805. (2 Stat 313 as amended 43 USC 751, 752) In Minnesota the importance of the records are described in Minnesota Statutes 381.12, Section Corners Relocated; 389.04, Rules for Surveys; and 389.05, Plats and Field Notes.

<sup>5</sup> Some of the difficulties faced by the modern land surveyors following in the footsteps of their predecessors may, in fact, reflect the difficulties faced by the deputies who carried out the public land surveys and the manner in which they overcame them.

Many of the surveying records for Minnesota are not well-known because they are not easily accessible. The earliest records, those dating from 1847 to 1858 when the surveys in Minnesota were administered by the Surveyor General of Wisconsin and Iowa with his office in Dubuque, are stored in the Iowa State Historical Society Library in Des Moines IA. (Squires, 2008; 2010 79) The records from 1857, when Congress established the Minnesota surveying district, until 1908, when the surveys were completed and the Office of the Surveyor General of Minnesota closed, are stored in the Minnesota History Center in St. Paul. (Kinney and Lucas, 1985; Squires, 2012a; 2012b) An unknown and probably large volume of records, covering the entire sixty years during which the surveys were carried out in Minnesota, are stored in the National Archives in Washington DC. (Squires, 2008; 2012c) More importantly, perhaps, than the scattered location of the records is the fact that while the records in the Minnesota History Center collections have been generally described by Kinney and Lucas (1985) and in more detail by the various finding aids currently listed in the Historical Society's Library Catalog and referenced below, the records contained in the other locations are poorly indexed. (Squires, 2008)

My objective in this project is twofold, firstly, to build on the two earlier projects funded by MNDOT that focused on the special instructions (Squires, 2008) and the contracts awarded to the deputies located in the MHS collections (Squires, 2012) and my extensive work focusing on the surveys in Minnesota (Squires 2010) and secondly, to describe the records currently housed in the Minnesota Historical Society (MHS) collections at the Minnesota History Center created during the surveys made by a few deputies. My aim is to provide a list of documents that describe what several deputy surveyors did and perhaps even explain why, documents that firstly, demonstrate the richness of material readily available to anyone interested in understanding the surveying process, and secondly, provide some details that are necessary for planning and developing an electronic database containing all documents of relevance and utility to the modern surveyor envisioned by Krafthefer (2006). Paper chains, linking together the records contained in the MHS collections for several deputies will show how documents in the MHS collections fit together by describing what was produced at every step in the public land surveying process. In doing so, I hope to show the utility of all the surveying records to modern land surveyors responsible for retracing the lines and maintaining and reconstructing the corners established by their predecessors, the U.S. deputy surveyors.

This research has several benefits;

- It provides a snapshot of the varied documents that are available to illustrate the public land surveying process in Minnesota, a necessary step in assessing the task of creating an electronic database,
- It provides a reasonably complete picture of what a deputy did, and in doing so provides a template for the records informing the modern land surveyors, who are responsible retracing the lines and reconstructing and/or maintaining the corners established by the deputies, and the archivists, who are responsible for maintaining the surveying records and making them accessible,
- It provides some direction for tracking surveying records absent from the MHS collection that might be found in the other localities, and
- It provides a guide for what others interested in the rectangular public land surveys in other states might do.

This project is the third in a large effort aimed at providing an electronic database containing image of all paper records produced during the surveying process in Minnesota. (Krafthefer, 2006) In the first project; "An Inventory of the Public Land Survey Records for Minnesota: The Special Instructions." I described the nature and location of the special instructions given to each deputy by the surveyor general. (Squires, 2008) I subsequently acquired digital images of those stored in the Iowa State Archives some of which I describe here. (Squires, 2008, 2009b) In the second project "The Public Land Survey Records in Minnesota: An Inventory and Description of the Deputy Surveyor Contracts in the Minnesota Historical Society Collections." I cataloged and described those contracts awarded to the deputy surveyors who carried out the public land surveys that are currently stored in the Minnesota History Center. (Squires, 2012a, 2012b) In the latter project I noted that the next step in creating a digital database of surveying records for Minnesota was "to compile paper trails, or rather paper networks, for deputies at different points in time – and thus for different parts of Minnesota – itemizing and describing all available surveying records in the MHS collections to fully reconstruct the surveying process in particular instances." (Squires, 2012a 38)

Two other projects are vital components in the effort and are, therefore, supplemental to this project. The original township plats, those retained in the surveyor general's office and those that were sent to the Commissioner of the General Land Office in Washington DC, are now available in a digital format. (MnGeo, 2012; Bureau of Land Management, 2012; Squires, 2010 339; Squires 2012c) The field notes made by the deputy surveyors are also available in a digital format. (MnGeo, 2012, Bureau of Land Management, 2012)

## Chapter 2. The Surveying Process

The surveying process produced a variety of records during the 60 years the surveys were carried out. While some of them have obvious importance to land surveyors, all of them deserve mention. They all reflect how the General Land Office ..., administered the surveys — especially what records needed to be kept. (Squires 2012b 16)

Individual documents, such as letters and maps, are not separate pieces of information but products of a surveying process designed to subdivide the land surface of the United States efficiently and inexpensively into parcels of land that the federal government would then convey to individuals, states, and corporations. Each record, such as the field notes or plats, comprises part of the record, and each particular volume of the field notes or a particular township plat, must be placed into an appropriate framework.

The surveying process was carried out in several steps, some involving office work and some involving field work. (Figure 2.1, 2.2) All produced documents, some of which may be found in Des Moines, some in St. Paul, and some in Washington D.C.<sup>6</sup> What documents are located in each of the collections of each of these localities, is complicated and remains uncertain. Some of the documents created in Dubuque, where the Surveyor General of Wisconsin and Iowa had his office, remained there and are now part of the Iowa State Historical Society collections in Des Moines. Some of them were transferred to St. Paul after the Minnesota surveying district was established. Of these some are currently in the MHS collections and some are not.<sup>7</sup> This means that part of the earliest surveying records for Minnesota are in Des Moines and part are in St. Paul and part are probably lost. Some of the documents relating to Minnesota surveys created in Dubuque or St. Paul were sent to Washington D.C. where they presumably form part of the largely unexplored National Archives collections. Many of the documents sent to Washington from St. Paul were duplicates of those retained by the surveyor general's office but the originals are not to be found in the MHS collections. The various contracts are perhaps the best example of such missing records but there are others. (Squires, 2012a) All this means that there are gaps in the records that might never be filled or that will only be filled by a time-consuming search in the National Archives.

The public land surveying process can be characterized by its several outcomes. The principal outcome, the reason the surveys were carried out, was a unique legal description for every legal subdivision that the federal government would offer for sale, a description primarily based upon the field notes of the deputies who ran lines and established corner monuments, and the plats derived from those notes. These outcomes necessarily involved several steps requiring fieldwork and office-work, each of which had an outcome, usually a document, each of which made significant contributions to the finished legal description and necessitated a cadre of federal employees that had to be supervised.

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<sup>6</sup> There is a high probability that some documents are missing.

<sup>7</sup> All the township plats and field notes were transferred and are in the MHS collections. Some of the contracts were transferred but none are in the MHS collections. None of the special instructions to the deputies were transferred.



All surveys in a particular year were framed by two documents. The first was the annual instructions from the Commissioner to the surveyor general, stating what money he would have available for surveying in the next fiscal year, July 1 – June 30, and suggesting where those surveys should be carried out. The second document was the annual report from the surveyor general to the Commissioner describing what surveys had been carried out and suggesting where the surveys should be carried out the following fiscal year. Usually, and not surprisingly, the annual instructions from the Commissioner mirrored the previous annual report of the surveyor general. The annual instructions can be found in the correspondence files, including the letters sent and the letters received by the Surveyor General of Wisconsin and Iowa, in the State Historical Society of Iowa collections (Squires, 2008) and the correspondence files of the United States Office of Surveyor General of Minnesota (United States. Surveyor General of Minnesota 2012a). Most of the annual reports have been published as part of the annual report of the Commissioner of the General Land Office and form part of the United States Congressional Serial Set, a multivolume publication published by the Government Printing Office, indexes to which have been produced by several commercial publishers. (Squires 2010 1) There are other less-visible framing documents. During the year the surveyor general was required to keep the Commissioner informed about the operations of his office. Each had to make quarterly and annual reports of his finances and estimates of his expenses and the accounting records comprise a distinct set of materials in the MHS collection. (United States. Office of Surveyor General of Minnesota 2012b) He also needed to transmit a variety of documents to the Commissioner all of which were accompanied by a letter describing what was being sent. Some of the documents directly related to the work of his deputies and some concerned a variety of other issues.

Action	Record
1. The Surveyor General awards a contract to an individual to run a standard line at a particular price per mile and gives instructions. He sends a copy of the contract to the Commissioner of the General Land Office in Washington for his approval. The Commissioner gives his approval.	Oath, Contract and Bond. General Instructions. Special Instructions. <sup>8</sup> Letter to Commissioner. <sup>9</sup> Letter from Commissioner.
2. The deputy carries out the work specified in the contract and returns his field notes to the Surveyor General's office.	Standard Line Field Notes.
3. The Surveyor General examines the notes for accuracy and sends a transcribed copy of the notes, together with the deputy's account, to the Commissioner of the General Land Office in Washington for payment.	Letter to Commissioner.
4. The Surveyor General awards a contract to an individual to establish the exterior lines of a district of townships in a particular area at a particular price per mile and gives instructions. He sends a copy to the Commissioner of the General Land Office for his approval.	Oath, Contract and Bond. General Instructions. Special Instructions. Letter to Commissioner. Letter from Commissioner.
5. The deputy carries out the work specified in the contract and returns his field notes and diagrams to the Surveyor General's office.	Exterior Field Notes. Township Exterior Diagram.
6. The Surveyor General examines the notes for accuracy and sends a transcribed copy of the notes, together with the deputy's account, to the Commissioner of the General Land Office in Washington for payment.	Letter to Commissioner. Letter from Commissioner.
7. The Surveyor General awards a contract to an individual to establish the interior lines of a district of townships in a particular area at a particular price per mile and gives instructions. He sends a copy to the Commissioner of the General Land Office for his approval.	Oath, Contract and Bond. General Instructions. Special Instructions. Letter to Commissioner. Letter from Commissioner.
8. The deputy carries out the work specified in the contract and returns his field notes to the Surveyor General's office.	Township Subdivision Field Notes. Annotated Township Exterior Diagram.
9. The Surveyor General examines the notes for accuracy and sends a transcribed copy of the notes and with the deputy's account to the Commissioner of the General Land Office in Washington for payment.	Letter to Commissioner. Letter from Commissioner.
10. The Surveyor General drafts a township plat and makes 2 copies, the Commissioner's plat and the Register's plat, and compiles descriptive lists for each township.	Plat Worksheet. Original Township plat. Commissioner's plat. Register's plat. Descriptive lists.
11. The Surveyor General sends the Commissioner's plat (the duplicate copy) to the General Land Office in Washington along with the deputy's account for payment.	Letter to Commissioner. Letter from Commissioner.
12. The Surveyor General sends the Register's plat (the triplicate copy) and descriptive lists to the appropriate land district office.	Letter to Land District Register.

Figure 2.1 The surveying process and the records.

<sup>8</sup> Special instructions sent by the surveyor general to the deputy were also sent to the Commissioner. At first, part of a letter, they later became a separate document.

<sup>9</sup> The documents that often accompany these letters have not been seen.

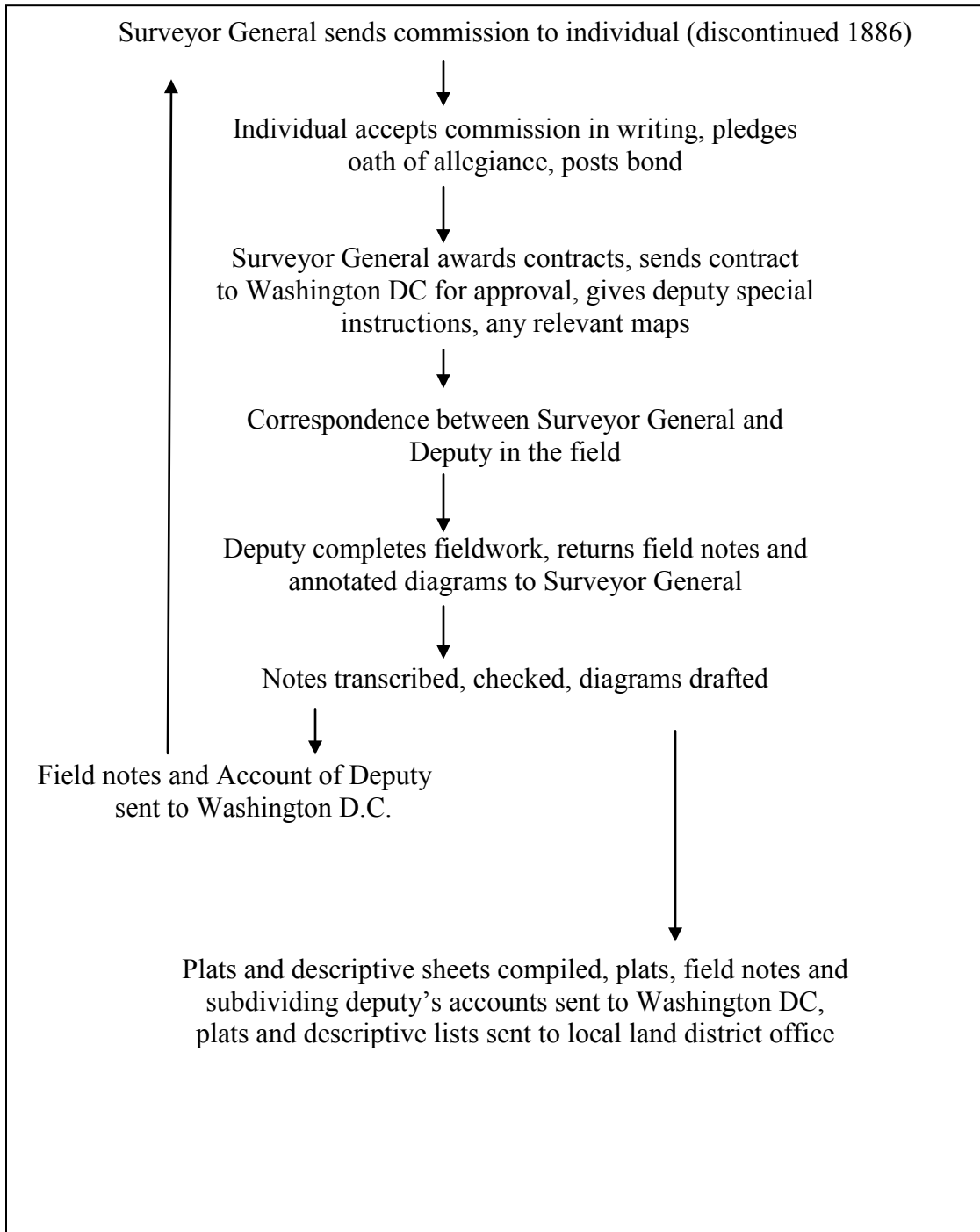


Figure 2.2 Generalized flowchart of office work.

The public land surveying process consisted of office-work, carried out by the staff of the surveyor general's office, and field-work, carried out by the deputy surveyors, individuals to whom the surveyor general gave a contract. In the first step a deputy received a contract and instructions to run a standard line – a correction line, standard parallel, or guide meridian – to control the township line surveys in an area. He swore an oath, see Squires (2010, 80; 2012, 23;

Squires, 2012a), and was given necessary instructions. At the end of the fieldwork he returned his notebook to the surveyor general's office where they were examined, approved, and transcribed. (Minnesota. Secretary of State, 2012a).<sup>10</sup> Copies of the field notes and the deputy's account were sent to the Commissioner. In the second step a deputy received a contract and instructions to establish a district of townships using the standard lines previously run for control.<sup>11</sup> In addition to his field notes each deputy was required to produce a diagram, as George W. Jones, Surveyor General of Wisconsin and Iowa stated, in his general instructions dated May 28, 1846,

With your field notes you must return a diagram, drawn upon a scale of one and a half inches to six miles, on which you are to represent each boundary you have run with the length and variation thereof, and with all the topography thereupon that can be properly expressed upon that scale. (White 1982 342)

As the notes were examined, approved, and transcribed draftsmen compiled diagrams depicting the township exteriors that had been established (United States Office of Surveyor General of Minnesota, 2012e) and copies of the field notes and the deputy's account were sent to the Commissioner. In the third step a deputy received a contract and instructions to subdivide several townships, those in which there was a demand for land and therefore a likelihood that it would readily be purchased at a subsequent government land auction, using the township exteriors for control. He also received a diagram showing the exteriors of the townships he was to subdivide. As Jones wrote,

With these instructions you are furnished diagrams of each of the townships of your district upon a scale of two inches per mile, upon which are accurately laid down the respective boundaries of each township, the length of each of the closing lines, the magnetic variation of each mile, and at least two of the bearing trees, at all the section corners thereon, where bearings were taken. P. in M. signifies post in mound, the pits to which (unless it is otherwise stated) are in the direction and at the distance hereinbefore prescribed. (White 1982 390)

The deputies were to show on these diagrams, and also mention in the notes, those surface features thought important to any prospective landowner. Jones admonished,

With your field notes you are to return a map of each township of your district, upon the scale above named, upon which is to be expressed the length and variation of each of your lines with all the topography neatly laid down. With a view to the

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<sup>10</sup> The notebooks catalogued in the MHS collections under the Secretary of State are generally regarded as the official set of the field notes. The notebooks catalogued in the MHS collections under United States. Office of Surveyor General of Minnesota is incomplete. See Figures 3.1 and 3.2. The relationship between the two sets is unknown.

<sup>11</sup> The work described in these earliest contracts, to establish standard lines and township exteriors, was not very precise because the area to be surveyed was poorly known, a problem that was to plague the first deputies and often delay their work.

completeness of these maps, you should make sketches of the topography as you progress with your lines, that you may be able to present not only the points upon your lines at which the same occurs, but also its direction and position between the lines or within each section, as every object of topography is to be properly closed or connected. These maps form the basis of all the official plats, and are carefully preserved in this office. (White, 1982 390)

At the end of the field work he returned both the diagrams and notebooks to the surveyor general's office where the notes were examined, approved, and transcribed (Minnesota. Secretary of State, 2012a; Minnesota Historical Society, State Archives, 2012d) and, as in the previous steps, copies of the notes and the deputy's account sent to the Commissioner.

In the fourth, and final, step of the surveying process the information from both the exterior and subdividing deputies' diagrams and notebooks was compiled into a preliminary plat labeled "worksheets" in the MHS collections. (Minnesota Historical Society, State Archives, 2012f) The data were then transferred to engraved township plats.<sup>12</sup> The draftsmen made three official plats. The first one was to stay in the surveyor general's office and is usually termed the original. (Minnesota. Secretary of State 2012b; Minnesota Geospatial Information Office. 2012b) The second, or duplicate, was called the Commissioner's plat and was sent to Washington. (Bureau of Land Management, 2012)<sup>13</sup> The third, or triplicate, was called the Register's plat and was set to the land district office where the land in the township was to be offered for sale at public auction.<sup>14</sup> There are distinct differences in the three plats. (Squires, 2012c) At the same time clerks compiled what was called a "descriptive list" for each township, tabular information describing both the bearing trees that were used to reference the corner monument for each corner on every township and section line as well as the nature of the land surface, soil and timber on every line. (Squires, 2010 259; Minnesota Historical Society, State Archives, 2012g) The list, which was also sent to the appropriate land district office, and the plat served as both a record of the surveying process and an advertisement for anyone interested in acquiring land in that area.<sup>15</sup>

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<sup>12</sup> All of the official records, the oaths, bonds, contracts, and plats, were pre-printed documents filled in with the appropriate information. In the correspondence files are numerous letters in which the Surveyor General asked for supplies of engraved, pre-printed, plats.

<sup>13</sup> In a letter dated November 20, 1902 (United States. Surveyor General of Minnesota, Letter Received vol. LXXXIX) the Commissioner advised the Surveyor General to transmit the triplicate Register's plat to the land district office. So, it would appear that the plat retained by the surveyor general was the original, the Commissioner's plat was the duplicate, and the Register's plat the triplicate.

<sup>14</sup> These plats appear to have been lost.

<sup>15</sup> In the earliest surveys, deputies either ran a standard line, or established township, or subdivided townships under their contracts. In the later surveys deputies perhaps did all three. Of the deputies described in this report Henry A. Wiltse only ran the 3<sup>rd</sup> correction line, James M. Marsh only ran township exteriors, George B. Wright, Norris Y. Taylor and George A. Ralph

Each deputy was paid for the work he completed so a considerable volume of letters sent by the surveyors general to the Commissioner of the General Land Office concerned payment for surveys that had been carried out. For the most part, however, there is no actual record that a particular deputy's account was ever paid.<sup>16</sup>

There is no reason to suppose that the surveying process in Minnesota was different than elsewhere at the time although clearly the surveys east of the Mississippi River are more like those in the Wisconsin and Iowa surveying district and the other Atlantic surveying districts in the eastern portion of the United States, and the surveys west of the Mississippi are more like those in the Pacific surveying districts throughout the western part of the country. Minnesota was established as a separate surveying district in 1857, a decade after surveying had started west of the St. Croix River and the year before the State of Minnesota came into existence. This necessitated the transfer of some surveying records by the Surveyor General of Wisconsin and Iowa in Dubuque to the Surveyor General of Minnesota in St. Paul. (Squires, 2010 286)

On April 1, 1857 the Commissioner of the General Land Office wrote to Charles L. Emerson, who had just been appointed as the Surveyor General for the newly created surveying district of Minnesota,

As soon as it is practicable you will get possession of the original field notes of the surveys made in Minnesota and now on file at Dubuque together with such plats constructed therefrom, the respective copies of which have been furnished by the Surveyor General of Wisconsin & Iowa to the proper officers, such documents will form the basis of your official organization and from time to time as the returns of surveys in Minnesota contracted for by the Surveyor General at Dubuque are made to him it will be his duty to pass upon the same, make transcripts of field notes, and duplicate and triplicate plats to be sent by him to the proper officers and transmit the original to your office until the Contracts already made in Minnesota are completed and the necessary examination approvals and returns of surveys are made and your office furnished with all the original documents relating to such surveys. (United States. National Archives, 1964 vol.17 258)

Two months later, the Commissioner wrote again giving Emerson instructions for starting his surveying operations.

The employment of faithful and competent Deputies is urged upon your attention and the (word illegible) on your own part respecting their duties under such surveying

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only subdivided townships – and Ralph had to use another deputy, Charles Armstrong, to finish his contract. William A. Burt carried out all three surveying tasks under a single contract.

<sup>16</sup> Accounting records kept in the surveyor general's office show the deputies' accounts were sent to Washington. Letters from the Commissioner to the surveyor general stated that the accounts had been sent to the Treasury Department for payment.

contracts as you will enter into with them, the object of all the surveys is to effectively establish the markers & monuments calculated to perpetuate the evidence thereof in the field. Blank forms of surveying contracts together with Bonds are herewith sent you. (200) Upon entering into a contract with a Deputy, a duplicate is to be handed to the deputy and a triplicate transmitted at once to this Office ....

On the field work being returned to your office and the examination of the field notes of surveys proving to have been correctly and faithfully performed and upon your approval thereof, you will send to this office a certified account of your Deputy accompanied by a duly authenticated transcript of the field notes of survey and the certified official plats of the townships surveyed & charged upon examination of the a/c and other corroborating evidences of the survey, the payment will be made to the deputy by a draft upon such U S Depository as the Deputy may indicate. (United States. National Archives, 1964 vol.17 295) <sup>17</sup>

The creation of the Minnesota surveying district separate from the Wisconsin and Iowa surveying district would cause what can only be called an “adjustment” of the surveying records to the new political realities. (Squires and Senjem, 2010, and below)

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<sup>17</sup> In left-hand margin is the note “ans<sup>d</sup> June 18/57”

### **Chapter 3. The Surveying Records (Figs. 3.1, 3.2)**

Each record produced in the surveying process, a contract, a volume of field notes, a township plat, even a letter, may contain information that is unique, found nowhere else, but, almost certainly contains information that can either be found in another record or that gives reference to another record. There is a complex relationship between the surveying records that reflects the surveying process and ties together the individuals who carried out the surveys in Minnesota.<sup>18</sup>

#### **3.1 The Contracts, Bonds, and Oaths**

The public land surveys were carried out by the individuals, including partnerships, awarded contracts by the surveyor general.

For all practical purposes a contract started the surveying process, binding the federal government and a private individual together for a particular period of time for a particular purpose, providing a thread that ties together the other surveying records.  
(Squires, 2012, 2)

Before signing a contract the deputy had to swear an oath, which served not only as his promise that he would faithfully perform the duties described in the contract but as the basis for the affidavits he was required to produce at the end of his field notes. Section 2 of an act passed on August 8, 1846 stated,

(T)he surveyors general of the public lands of the United States, in addition to the oath now authorized by law to be administered to deputies on their appointment to office, shall require each of their deputies, on the return of his surveys, to take and subscribe an oath or affirmation that those surveys have been faithfully and correctly executed according to law and the instructions of the surveyor general; and on satisfactory evidence being presented to any court of competent jurisdiction, that such surveys, or any part thereof, had not been thus executed, the deputy making such false oath or affirmation shall be deemed guilty of perjury, and shall suffer all the pains and penalties attached to that offence (sic); and the district attorney of the United States for

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<sup>18</sup> There is uncertainty about the actual surveying process and the records it produced because there were, somewhat inevitably, variations in the process during the sixty years in which the surveys were carried out in Minnesota. Not every one of the steps in the process described in the previous chapter seems to have been followed in every case. Whether this is because the step was not taken and therefore there is no record of it or whether the step was taken and the record missing cannot be determined. As an example, several diagrams were produced during the process, many were sent to Washington but there is no record of them in the MHS collections. It is tempting and completely erroneous to believe that the National Archives contains all the records that are not to be found in the MHS collections or the Iowa State Historical Society collections although undoubtedly a thorough search of the National Archives should be undertaken.



the time being, in whose district any such false, erroneous, or fraudulent surveys shall have been executed, shall, upon the application of the proper surveyor general, immediately institute suit upon the bond of such deputy; and the institution of such suit shall act as a lien upon any property owned or held by such deputy, or his sureties, at the time such suit was instituted. (Instructions to the Surveyor General of Oregon, 1851 quoted in White, 1982, 444-445)

<p>Land survey summary sheets containing</p> <ul style="list-style-type: none"> <li>• Lists describing survey reference posts and locations of section, quarter section, and meander posts for each township in Minnesota Land survey plats.<sup>19</sup></li> </ul> <p>Land survey plats.</p> <ul style="list-style-type: none"> <li>• Minnesota townships plats compiled from the field notes of deputy surveyors. Also see Minnesota Geospatial Information Office (2012b)</li> </ul> <p>Land survey field notes and related records.</p> <ul style="list-style-type: none"> <li>• Field notebooks kept by deputies as they ran the exterior and subdivision lines of each Minnesota township. Also see Bureau of Land Management, General Land Office Records (2012)</li> <li>• Island survey notebooks.</li> <li>• Indian reservation and Fort Ripley reservation survey notebooks.</li> <li>• Road survey notebooks.</li> <li>• Resurvey notebooks.</li> <li>• Record of Public Land Surveys in Minnesota 1847-1891.</li> <li>• Map of Sioux reserve, 1859 by Hutton and Snow.</li> </ul> <p>Land survey miscellaneous records.</p> <ul style="list-style-type: none"> <li>• Assorted records documenting land survey activities including materials on surveying islands and the state's western and northern boundaries and resurveying.</li> </ul>
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Figure 3.1 The surveying records in the Secretary of State's collection at the Minnesota History Center. (Squires, 2012b based on the MHS finding aids)

Each contract contained many similar details; the name of the deputy, the date the contract was issued, the date the fieldwork was to be completed, a description of the survey work to be done, the rate of pay, the estimated cost of the survey, and the source of the money to pay for the work. All contracts were sent to the Commissioner of the General Land Office for his approval. At the same time, of course, each contract was unique since each was awarded to a particular individual or partnership on a particular date and the work to be carried out was distinct to a particular area. Contracts were awarded to run particular lines – correction lines, standard parallels, or guide meridians – to establish township exteriors, or to subdivide townships. Some were awarded to retrace or otherwise correct lines that had already been run. Some specifically mentioned the

<sup>19</sup> These records are similar to the descriptive lists of survey posts shown in Figure 3.2. The relationship between the two records is not known.

work was to include meanders, others did not. Some were awarded to subdivide American Indian reservations.

Plats of township boundaries. <ul style="list-style-type: none"><li>• Plats of various township boundaries drawn from deputy surveyor's field notes.</li></ul>
Land survey plats: Worksheets. <ul style="list-style-type: none"><li>• Worksheets of Minnesota's interior township boundaries compiled from deputies' field notes.</li></ul>
Descriptive lists of survey posts. <sup>20</sup> <ul style="list-style-type: none"><li>• Lists describing survey reference posts and locations of section, quarter section, and meander posts for each township in Minnesota, see Land survey summary sheets above</li></ul>
Land survey field notes. <ul style="list-style-type: none"><li>• Transcribed copies of the notebooks kept by deputies. Incomplete set.</li><li>• Field notes of deputies commissioned to examine the surveys.</li><li>• Record of Township Lines 1847-1891.</li></ul>
Letters received and sent. <ul style="list-style-type: none"><li>• Letters Received.</li><li>• Letters Sent.</li></ul>
Miscellaneous records. <ul style="list-style-type: none"><li>• Annual and miscellaneous reports, inventories, manuals, various office work records, petitions for surveys, and timber agent accounts and correspondence.</li></ul>
Contracts for surveys. Contracts between the surveyor general and deputies to carry out surveys.
Accounting records. <ul style="list-style-type: none"><li>• Accounts of revenues and expenditures.</li></ul>

Figure 3.2 The surveying records in the United States Surveyor General of Minnesota collection at the Minnesota History Center (Squires 2012 based on the MHS finding aids)

Only a small fraction of copies of the contracts awarded to the deputies in the 60 years during which the surveys were carried out in Minnesota are to be found in the MHS collection. (United States. Office of Surveyor General of Minnesota 2012c) The first is dated 1881 and the last dated 1907 but, even within that short span of time, the collection does not include all the contracts awarded during the period 1881-1907. However, there is a richness to the collection because some contracts are accompanied by documents relating to the deputy's execution of the survey.

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<sup>20</sup> These records are similar to the land survey summary sheets shown in Figure 3.1. The relationship between the two is not known.

(Squires 2012a) Just why there are so few is a puzzle because on March 12, 1857 the Commissioner of the General Land Office informed Warner Lewis, Surveyor General of Wisconsin and Iowa, that Congress had created a new surveying district co-extensive with the future State of Minnesota, and wrote, “you will enter into no surveying contracts, for lands situated within the limits of the proposed State of Minnesota.” (Iowa State Archives. Letters Received. Box 61) In addition, there is clear evidence that Lewis sent Emerson, at least some of the contracts of the deputies who worked in Minnesota Territory between 1847 and 1857. In a letter dated October 30, 1857, for example, Lewis wrote that he had sent Emerson field notes, contracts and bonds of deputies in addition to the original township notes and the original field notes of subdivisions of some of the surveys completed. (Iowa State Archives. Letters Sent 83) Some, perhaps most, of the contracts are lost or are to be found only in the National Archives collections. Although only a few contracts exist there are two volumes in the MHS collections that provide a record of the contracts that were made 1857-1865 and 1874-1907. One volume is titled Record of Contracts and Instructions for Surveys, 1857-1865 consists of a volume physically located in the same box as the contracts. A second volume is titled Record of Contracts and Instructions for Surveys, 1874-1907.

In some cases contracts were not awarded but rather the surveys were carried out under “special instructions” (Squires, 2011, 2012a) issued to carry out surveys that individuals had petitioned to be carried or to correct errors discovered in the work performed under a previous contract.<sup>21</sup> In the first case, the individuals concerned were responsible for paying for the cost of the surveys. Often, these “special instructions” gave legal effect to an agreement that had already been reached between individuals and a particular deputy to survey particular tracts of land and merely needed the Commissioner to approve. Virtually all islands were surveyed without the benefit of a formal contract; what the deputy was to do was spelled out in the “special instructions.”

Every deputy awarded a contract executed a bond, in essence insurance, for his work. The bond was a guarantee from a person or company, who thus acted as surety for the deputy surveyor, promising to be financially responsible should the deputy not fulfill his contract.

### **3.2 The Instructions**

The deputies carried out their surveying duties under the provisions of several sets of general instructions. These instructions George W. Jones issued a first set on May 28, 1846 that were used by all deputies working in Minnesota before 1851 (Dodds et al, 1942 69-79; White, 1982 339-355). His successor, George B. Sargent, issued a second set in 1851 (Dodds et al, 1942 102-116; White, 1982 385-400) but it is not clear how many contracts were completed using them. In April, 1851 Sargent was directed to use the surveying manual recently produced by the Commissioner of the General Land Office to guide the surveys in Oregon Territory, to close certain corners. (White, 1982 115) The next year he was directed to use the manual in all future

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<sup>21</sup> These “special instructions” under which deputies carried out work in isolated areas under special provisions of law at the expense of private individuals were in essence contracts. They should not be confused with special instructions, see text below.

surveys in Minnesota Territory. (White, 1982, 115) All subsequent surveys in Minnesota were carried out under the following general instructions:

- Instructions to the Surveyor General of Oregon, Being a Manual for Field Operations (Washington, Gideon & Co., 1851) reprinted in White, 1982 433-456
- Instructions to the Surveyors General of Public Lands of the United State, for those Surveying Districts Established in and Since the Year 1850; containing also, A Manual of Instructions to Regulate the Field Operations of Deputy Surveyors, Illustrated by Diagrams (Washington. A. O. P. Nicholson, 1855) (reprinted in Dodds et al, 1942 117-186; White, 1982 457-500)
- Instructions to the Surveyors General of the United States, Relating to their Duties and to the Field operations of deputy Surveyors (Washington. Government Printing Office, 1864) Reprinted in White (1982) 501-506.
- United States. Instructions of the Commissioner of the General Land office to the Surveyors General of the United States Relative to the Survey of the Public Lands and Private Land Claims (Washington D.C. Government Printing Office, 1881) Reprinted in White (1982)
- United States. Manual of Surveying Instructions for the Survey of the Public Lands of the United States and Private Land Claims (Washington D.C. Government Printing Office, 1890) Reprinted in White (1982)
- United States. Manual of Surveying Instructions for the Survey of the Public Lands of the United States and Private Land Claims (Washington D.C. Government Printing Office, 1894) Reprinted in White (1982)
- United States. Manual of Surveying Instructions for the Survey of the Public Lands of the United States and Private Land Claims (Washington D.C. Government Printing Office, 1902) Reprinted in White (1982)

Periodically, the Commissioner of the General Land Office issued instructions to all surveyors general. Called circulars, these instructions sometimes concerned how the surveyor general operated and sometimes how the deputies operated and, in the latter case, formed part of the contract of every deputy. Unlike the published manuals and the special instruction, rarely are these instructions referenced and there is no index of all such documents, appearing either as part of the correspondence from the Commissioner or as a separate document in a folder containing related material. Although there is no real way of knowing precisely how the information in these circulars was communicated to the deputy, in a letter attached to a circular dated June 15, 1893, C. N. Bliss, Secretary of the Interior wrote,

The foregoing instructions are hereby approved, and authority is hereby given the Commissioner of the General Land Office to direct the surveyors general to attach the

same to the special instructions to deputy surveyors accompanying each contract for the survey of the public lands, the same to form part of the special instructions. (United States. Office of Surveyor General of Minnesota, 2012c) <sup>22</sup>

Some of the circulars are contained in the various volumes of letters received by the surveyors general (United States. Surveyor General of Minnesota, 2012a) and in “Letters sent by the General Land Office to Surveyors General, 1796-1901.” (United States. National Archives, 1964) I have also seen a number of them in the letters received by the Surveyor General of Minnesota. (United States Surveyor General of Minnesota, 2012a)

January 28, 1866 Lot numbering (White, 1982 506) <sup>23</sup> June 10, 1868 Island surveys. (White, 1982 507) July 13, 1874 Surveying the beds of water bodies. (White, 1982 508) April 17, 1879 Filing plats (White, 1982 509) November 1, 1879 Subdividing sections (White, 1982 509-510) March 13, 1883 Restoration of Lost and Obliterated Corners (White, 1982 545-551) June 2, 1887 Subdividing sections (White, 1982 553) October 16, 1896 Circular on restoration of Lost or Obliterated Corners and Subdivision of Sections (White, 1982 683-691)
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Figure 3.3 Circulars printed in White (1982)

The surveyor general issued special instructions to each deputy at the start of his contract or during his fieldwork. (Squires, 2008) Unlike the general instructions, which concerned all deputies in a particular surveying district, these related to a particular contract awarded to a particular deputy at a particular time to carry out a particular surveying task. The special instructions were extraordinarily varied in content. Some covered no more than what was in the contract, giving the deputy necessary administrative details about his contract, others supplemented the general instructions as the surveyor general gave the deputy greater specificity on how he was to carry out the surveys. According to Dodds et al (1942, 197),

The special instructions were each in the form of a letter to the deputy surveyor and contained: a list of the townships and ranges included in the contract; whether township or subdivision; places of beginnings and ending; instructions as to connections with adjacent surveys; diagrams to show pertinent data for areas already surveyed; copies of general instructions; innumerable special references; and others.

Naturally, these special instructions contained many items that were similar. In fact they contained identical paragraphs. (see Dodds et al 1942 352 onwards for reprints of

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<sup>22</sup> The location of this circular in a folder along with the special instructions to Norris Y. Taylor that reference the circular strongly suggest that this folder, at least, was created by the Surveyor General's office staff.

<sup>23</sup> White noted. “This circular was sent to the Surveyors General of California, Oregon, Washington, Dakota, Minnesota, Kansas and Nebraska, New Mexico and Idaho. Copies were sent to Florida on June 22, 1869, and to Louisiana on December 3, 1878.”

these paragraphs)

The special instructions are quite elusive. They, and reference to them, are contained in the correspondence files of the Commissioners of the General Land Office, the surveyors general, and the deputies.<sup>24</sup> (Squires 2008 11) I have suggested elsewhere that they should be defined as “Any letter sent by the Surveyor General to a deputy while the deputy was engaged in fulfilling a contract.” (Squires 2008 11) In the earliest surveys in Minnesota copies of the special instructions can be found in the correspondence files of the Surveyor General of Wisconsin and Iowa and the Surveyor General of Minnesota. (Squires, 2008) Since they were also forwarded to the Commissioner in Washington, they are probably also in the National Archives. Towards the end of the surveys in Minnesota, however, special instructions were being issued separately and that will cause significant problem to finding them. These instructions occasionally appear in other parts of the MHS collection, in the contracts file for example.

The following examples of special instructions would seem to cover the range of possibilities that the deputy received more than the general instructions about how to carry out his contract from the Surveyor General. At one end of the range is a letter suggesting that there were no special instructions. So, Surveyor General Emerson wrote to H. P. Van Cleve, June 26 1857,

As this is regular and plain work, you will require no instructions for your guidance, than the copy of printed General Instructions handed to you herewith, which you will carefully examine that you be able to fully comply with all of its requirements. (United States. Surveyor General of Minnesota, Letters Received)

At the other end of the range is a letter stating that there are additional instructions. In this particular case, the instructions are attached to the letter. Surveyor General Eli S. Warner wrote to Albert T. Armstrong,

In addition to printed instruction in Manual of Instructions to Surveyors General, dated January 1st 1902, furnished you, the following special instructions are issued for your guidance in the execution of surveys under your contract No. 124 of this date. (United States. Surveyor General of Minnesota, Letters Received)

More ambiguous is a letter that suggests a situation in which the deputy might have received additional instructions but whether he did or not is not certain. Thus, Surveyor General Emerson wrote to Silas Barnard, June 22, 1857

This office not being in possession of the original field notes of the surveys that have been executed in the Territory, I am not able to hand to you with your contract of this date, notes of the section and quarter section corners on the township lines surrounding the several townships embraced in your (contract) for subdivision, but it is not supposed that you will suffer any consequence by not having such notes. (United States. Surveyor General of Minnesota. Letters Received)

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<sup>24</sup> In some instances, however, letters contain reference to special instructions that are rarely physically present.

### 3.3 The Correspondence (Squires 2010 91-104)

Letters were the only way for individuals to communicate, even those separated by modest distances, in the era before the existence of widespread electronic communication or an extensive transportation system. The letters between the deputies who carried out the surveys in Minnesota and the surveyors general and those between the surveyors general and the Commissioner of the General Land Office in Washington are thus key to understanding the surveying process. (Squires 2009b) As a general rule letters share several important characteristics.

In a letter, one individual at one place sends information to another individual at another place on a particular date, information that is presumably relevant, maybe necessary, and usually timely. Each letter might cover a single topic or address a range of subjects. One letter might merely acknowledge receiving certain documents while another might raise a question about what to do under a particular set of circumstances or provide the answer to such a question. Most make reference to other letters. In many of the letters sent by the surveyor general, for example, he acknowledged having received a letter and responded to it. Many letters received by the surveyor general may, in fact, make reference a previous letter he had received or a previous letter he had sent. So there are chains of letters involving letters received and sent that concern a particular topic or a specific contract. The subject of most letters is, of course, surveying; either surveying in general or perhaps relating to a particular survey. Many letters, particularly to those between surveyor general and the Commissioner, were obviously written to accompany documents of one type or another, many of which needed the Commissioner's approval and so contain reference to other surveying records, some of which are part of the MHS collections. As an example; on January 8, 1885, Martin S. Chandler, Surveyor General of Minnesota, sent a letter to N. C. McFarland, Commissioner of the General Land Office, to accompany the diagrams and field notes of township exteriors and the plat and field notes of T.61N R.17W surveyed by Day F. Stacy, deputy surveyor, under his contract No.40 dated June 13, 1884. (United States. Office of Surveyor General of Minnesota, 2012c)

The letters in the MHS collections concern all aspects of surveying public lands in Minnesota. They are divided into those received by, and those sent by, the surveyor general. In the MHS collections the two are catalogued together. (Minnesota Historical Society, State Archives, 2012a) The collection contains letters received by the Surveyor General of Minnesota in his office in St. Paul, and copies of letters sent by the Surveyor General of the Northwest, from his office in Detroit, Michigan (1854-1857) and by the Surveyor General of Minnesota (1857-1908).<sup>25</sup>

Not surprisingly, in the early days of the office of Surveyor General of Minnesota a large number of letters passed between Charles L. Emerson, the first Surveyor General of Minnesota, and Warner Lewis, the Surveyor General of Wisconsin and Iowa, relating to the transmission of the

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<sup>25</sup> The act establishing the office of Surveyor General of Minnesota on March 3, 1857, authorized him to close the Office of the Surveyor of the Northwest then located in Detroit.

relevant surveying records from Dubuque to St. Paul.<sup>26</sup>

A bulk of the letters received by the surveyor general came from the Commissioner of the General Land Office. There is a considerable volume of what the MHS catalogers described as “routine office correspondence,” in which the Commissioner acknowledged having received letters and accompanying documents, including a large number of letters dealing with the surveyor general’s duties, the finances of his office, and the areas that should be surveyed. In one such letter the acting Commissioner wrote to Surveyor General Eli S. Warner on January 3, 1903,

I return under separate cover, by registered mail, the exterior diagram and the transcript of field notes & plats of township 116 & 167 north, range 35 west, for the necessary corrections. (United States. Surveyor General of Minnesota. Letters Received. Minnesota Historical Society. State Archives. Volume. XC)

Unsurprisingly, letters from deputies describe the progress and problems associated with their work.

The bulk of the letters sent by the surveyor general were sent to the Commissioner, much of it consisting of “routine office correspondence” concerning the various reports the surveyor general was required to make; an annual report on the operations of his office, quarterly and annual accounts, letters accompanying contracts, field notes, and plats, pay vouchers, and responses to inquiries from the Commissioner. Most of the correspondence between the surveyor general and the deputies he employed dealt with the work they had been employed to carry out. The letters sent by Surveyor General Emerson in 1857 have been described. (Squires, 2010 92-104) Unsurprisingly, there is a sequence in letters between deputies and surveyor general – notification of contract and instructions at the start – problems during the work including delays – errors and mistakes found when the work was checked – sending the accounts and other records to Washington or a particular land district office.

The letters of most interest to the modern land surveyor are those concerning the way in which the deputies carried out the field work specified in their contracts. This can be seen in the field notes that they were required to keep but why they did what they did can only be understood by reading the instructions each deputy was given when he was awarded his contract or during the work, often in response to a question he asked of the surveyor general.

In the MHS collections all the letters, the letters received as well as the letters sent, are contained in letterbooks, some of which possess an index some of which do not.<sup>27</sup> But tracking relevant letters without an index is not particularly difficult since most searches are for a letter between particular individuals on a particular date, and the letters – in the case of the letters received – and copies of the letters – in the case of the letters sent – are arranged chronologically. The bulk

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<sup>26</sup> The absence of certain records in the MHS collections, such as special instructions and contracts, raises questions about what records were considered “relevant” at the time.

<sup>27</sup> The index may or may not be useful since any letter, particularly one sent by the surveyor general to the Commissioner, might include information about several issues or several surveys.



of the letters are handwritten, some, particularly those written towards the end of the nineteenth century, are typewritten. Some are unreadable, having been handwritten on very flimsy paper through which the ink has bled.

The following is a selection of letters from 1851 selected from digital images of letters in the collections of the State Historical Society of Iowa in the possession of the author.

Commissioner Justin Butterfield to Surveyor General Caleb Booth, January 9,

You are requested to transmit to this office, on receipt hereof, six copies of the latest Manual of Instruction to Deputy Surveyors which has emanated from your office.  
(Iowa. Secretary of State Land Records. Record Group 81 Letters Received Box 63)

Surveyor General Caleb Booth to Commissioner Butterfield, January 22,

In compliance with your communication under date of the 9th inst. I have the honor to transmit in today's mail six copies of my General Instructions to Deputy Surveyors.

These instructions in many instances have been varied by manuscript special instructions, to suit the nature of the work; copies of all of which, however, have been transmitted to your office. (Iowa. Secretary of State Land Records. Record Group 81 Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook D. 1848-1851 348)

Surveyor General Booth to Joseph M. Marshall, March 20,

You are hereby commissioned to survey as hereinafter directed, an island in the Mississippi river at the Falls of St. Anthony in Section 23 Township 29 of Range 24 West of the Fourth Prin. Mer. in the Territory of Minnesota, for which service you will be paid in full by Wm. Hollingshead Esq. of St. Paul in said Territory, at whose solicitation this survey is instituted.

Herewith you will receive a diagram of said section, embracing a description of all the original corners upon the boundaries thereof and a copy of my printed General Instructions to part 7 page 16 & to pages 77 & 78 of which your attention is specially directed.<sup>28</sup> Your affidavit may be in the form prescribed upon page 20, omitting what relates to "contract". You will also receive herewith a blank for your returns & blanks for assistants, oaths, & c. page 3. A form for your own oath as Deputy Surveyor which must be executed prior to the survey and with those of your assistants returned with your field notes. (Iowa. Secretary of State Land Records. Record Group 81 Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook D. 1848-1851 361)

Surveyor General Booth to Edwin James Jr. Burlington Iowa, May 7,

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<sup>28</sup> I do not know to which instructions the Surveyor General is referring.

Herewith you will receive your commission as deputy Surveyor & contract and Bond to be executed by you and returned by mail to this office. You will follow to the letter the instructions on the Bond for executing the same. The oath to perform the duties of a Deputy Surveyor must be taken before some duly authorized officer having a seal and must be returned to this office with the contract and Bond. You must not fail to study your Special & General Instructions faithfully as any derivation from them will cause the rejection of your work. (Iowa. Secretary of State Land Records. Record Group 81 Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook D. 1848-1851 388)

Surveyor General Booth to Jesse T. Jarrett and Hiram C. Fellows May 14,

The district of townships for which this day you have entered into a contract, is situated upon and in the vicinity of the St. Croix river, and lies partly in the State of Wisconsin, and partly in the Territory of Minnesota – the said river being the boundary between the said State and Territory. (Iowa. Secretary of State Land Records. Record Group 81 Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook D. 1848-1851\_494)

Surveyor General Booth to Commissioner Butterfield May 30,

Herewith you will receive a copy of my instructions to Henry A. Wiltse, whom I have appointed my Deputy & assistant for the purpose of a general examination of surveys, which is in progress in the field or after their completion. The instruction to Mr. W. will explain the duties he is to perform, and the manner in which he is to be paid for the same. (Iowa. Secretary of State Land Records. Record Group 81 Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook D. 1848-1851 461)

Surveyor General Booth to Commissioner Butterfield, June 11,

I have the honor to transmit herewith one of each of the Triplicate Contracts (with attached bonds) entered into by me with Joseph M. Marshall and Leonard B. Hodges for subdivisions in Minnesota, together with a copy of my Special Instructions, and a diagram of the districts in each case. (Iowa. Secretary of State Land Records. Record Group 81 Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook D. 1848-1851 543)

Surveyor General Booth to Jos. M. Marshall at Falls of St Anthony, July 19,

Your survey of an island in the Mississippi river in sec. 23 Town 29 N. Range 24 West 4th Mer. under instructions of 20th March last has been approved and diagrams thereof this day transmitted to the General and District Land Offices.

Your field notes of the survey on island in Town 30 Range 22 West 4th Mer have also been received. On examination thereof, I find that this island is divided by the line of

Secs. 13 & 14 which you either have not run or have omitted to forward the field notes of the same.

You will please make the necessary corrections with as little delay as possible, showing the proper connexion (sic), and placing meander corners on the island at the respective points of intersection. (Iowa. Secretary of State Land Records. Record Group 81 Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook D. 1848-1851 591)

Surveyor General Booth to Butterfield, August 12,

Herewith is transmitted a copy of the triplicate relinquishment of the contract of Leonard B. Hodges Deputy Surveyor of May 29, 1851. Also a copy of his report upon the same district. (Iowa. Secretary of State Land Records. Record Group 81 Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook D. 1848-1851 628)

Surveyor General Booth to Commissioner Butterfield September 6,

Your letter of the 26th ultimo, in relation to the course to be pursued in regard to the surveys executed by Theodore Conkey under his contract of 6th Augt. 1849 is received. By same mail I received a letter from Mr. Conkey a copy of which is enclosed, in which he proposed to pay all expenses incurred in making corrections of his work. (Iowa. Secretary of State Land Records. Record Group 81 Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook D. 1848-1851 652)

Surveyor General Booth to Leonard B. Hodges Grand Marsh WI, October 13,

Herewith you will receive the four remaining diagrams of your district, which were not furnished you on leaving Dubuque. (Iowa. Secretary of State Land Records. Record Group 81 Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook D. 1848-1851 675)

### **3.4 The Field Notebooks (Squires 2009a)**

The general instructions, under which each deputies carried out their surveys, whether running standard lines or township exterior lines, subdividing townships or conducting resurveys, contained various provisions concerning how they were to keep a record of what they did and what they saw. As the Oregon Manual, the foundation for all later general instructions, stated

They ... must be a faithful, distinct and minute record of every thing (sic) officially done and observed by the surveyor and his assistants, pursuant to instructions, in relation to running, measuring, and marking lines, establishing boundary corners, &c.; and present, as far as possible, a full and complete topographical description of the country surveyed, as to every matter of useful information, or likely to gratify public curiosity. (White 1982 465)

These notes, contained in 1,410 volumes totaling nearly 310,000 pages, have recently been

scanned and indexed and can now be accessed online. (Minnesota Geospatial Information Office, 2012a, Bureau of Land Management, General Land Office Records, 2012 )

The field notes were to be followed by a general description of the township and also by the names of the individuals employed to assist in running, measuring and marking the lines and corners described in the notes each of whom was to give an affidavit “sworn and subscribed before a justice of the peace, or other officer authorized to administer oaths.” (White, 1982 467)

Importantly, the Oregon Manual, stated,

The original field books, each bearing the written approval of the Surveyor General, are to be substantially bound into volumes of suitable size, and retained in the surveyor general’s office, and certified transcripts of such field books (to be of foolscap size) are to be prepared and forwarded, from time to time, to the General Land Office. (White, 1982 469-470)

### **3.5 The Township Plats and Descriptive Sheets<sup>29</sup> (Squires, 2012c)**

The general instructions also contained provisions regarding the plats of every township that were compiled from the data recorded by the deputies in their field notes and diagrams. Over 3,600 original plats, those that were retained by the surveyor general office are available online. (Minnesota Geospatial Information Office, 2012b) Those plats that were sent to the Commissioner office are also available online.(Bureau of Land Management, General Land Office Records, 2012) The Oregon Manual stated

Each township plat is to be prepared in triplicate: one for the General Land Office, one for the district office, and the third to be retained as the record in the office of the Surveyor General. (White, 1982 469)

All three township plats graphically depict the lines run by the deputies.<sup>30</sup> Typically, they contain information about who carried out the work and when, the date of the contract, even how many miles were actually run. All were dated and approved/certified by the surveyor general. Some plats contain additional certification as land that was initially omitted, such as an island, was surveyed. They are directly and intimately related to other records already mentioned, the field notes that provided the data for the plat and the contracts that spelled out the details of the fieldwork to be performed by the deputies. The plats are intimately related to the descriptive notes, as the Oregon Manual stated,

With the copy of each township plat furnished to a district land office, the surveyor general is required by law to furnish descriptive notes as to the character and quality of the soil and timber found on and in the vicinity of each surveyed line, and giving a

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<sup>29</sup> Descriptive sheets, descriptive notes, and descriptive lists all refer to the same type of document.

<sup>30</sup> I have previously seen the missing Register’s plats.

description of each corner boundary.<sup>31</sup> (White, 1982 470)

Such lists, containing a description of the bearing trees and land quality in a particular township, were sent to the local land district office along with a copy of the plat, lists that are keyed to the alphabetical letters often, although by no means always, running along the margins of plats.<sup>32</sup> (Fig. 3.4) The plats are obviously related to several letters because they had to be sent to Washington, where they had to be approved by the Commissioner of the General Land Office, and to the local land district office.

Descriptive sheets were made for each township by clerks in the surveyor general's office using the information in the deputy surveyors' field notes. (Fig. 3.5) They are, in effect, an abstract of the field notes. (United States. Office of Surveyor General of Minnesota, 2012g; Minnesota. Secretary of State, 2012c) Accompanying the Register's plat, they were sent to the land district office where the land in the township would be offered for sale at public auction.<sup>33</sup>

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<sup>31</sup> "Printed blank forms for such notes will be furnished by the General Land Office." (White, 1982 470)

<sup>32</sup> There seems to be no explanation for which plats possess the marginal letters.

<sup>33</sup> Each sheet consists of four pages containing the following tables, although the exact arrangement differs;

"Description of Section and Quarter Section Corners on Township Lines – see Township Plat" gives information in columns labeled; "Posts", "Bearing Trees", "Inches Diame'r", "Courses They Bear", "Links Distant." The "Posts" refer to the points where the section lines intersect with the township line indicated by a capital letter, A-Y and where the quarter section lines intersect with the township line indicated by a lower case letter, a-y.

"Description of the Surface, Soil and Timber upon the Township Lines" along the township south boundary, the east boundary, the west boundary and the north boundary.

"Interior Section Corners Described" shows similar information to table 1 above for specific section corners

"Interior Quarter Section Corners Described" shows similar information to table 1 for specific section lines

"Description of the Land, Timber, etc., on the Interior Sectional Lines" along the lines between specific sections

"Meander Posts on .... shows similar information to table 1 for specific meander posts, "The figures in this column refer to the Post numbered in red ink on the plat"

At the bottom of page four is the notation, "The foregoing list accurately describes all the corners and the land in said Township, as appears by comparing the same with the original and approved field notes on file in this office." The sheet is often dated and signed by the Surveyor General.

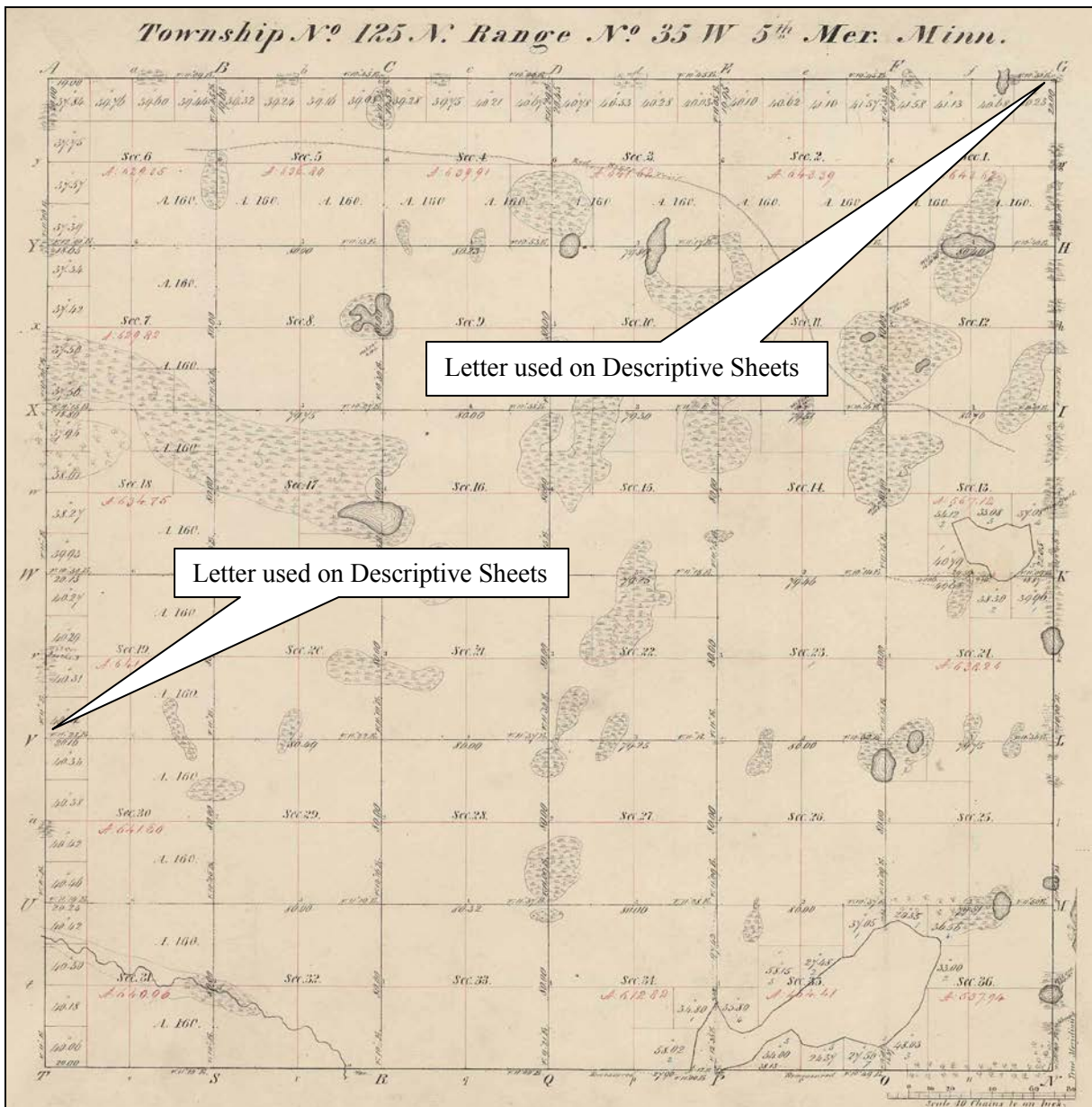


Figure 3.4 Original township plat showing the letters used to denote corners in the descriptive sheets. (Image downloaded from Minnesota Geospatial Information Office (2012b))



Township No. 116 North....., Range No. 23 West....., Meridian, Minnesota.....

Description of Section and Quarter Section Corners on Township Lines.—see Township Plat.																			
POSTS.	BEARING TREES	INCHES DIAMETER	COURSES THEY BEAR	LINKS DISTANT	POSTS.	BEARING TREES	INCHES DIAMETER	COURSES THEY BEAR	LINKS DISTANT	POSTS.	BEARING TREES	INCHES DIAMETER	COURSES THEY BEAR	LINKS DISTANT	POSTS.	BEARING TREES	INCHES DIAMETER	COURSES THEY BEAR	LINKS DISTANT
A	Lake				G	1st a post in a mound of earth 1000. French 1st				N	Elm 20 228° E 590 Elm 14 226° W 965				T	Elm 10 253° W 173 Elm 10 288° E 229 Lind 15 27° E 16 Br Oak 6 270° W 119			
"	"				g	Br Oak 16 214° W 160 Br Oak 10 270° E 123				n	1st a post in a mound of earth 1000. French 6 1st				i	Elm 14 230° E 205 Br Oak 13 210° W 964			
B	Sugar 30 267° W 18 Hickory 6 240° E 43				H	Br Oak 12 257° W 160 Br Oak 10 215° E 141 Br Oak 7 277° E 200 Br Oak 2 240° W 146				O	Elm 10 210° E 639 French "				U	Elm 10 250° W 424 Br Oak 13 229° E 826 Elm 10 263° E 263 French "			
b	"				h	Br Oak 10 214° W 297 Br Oak 3 25° E 237				o	Ash 10 290° W 391 Elm 12 270° E 324				u	Sugar 12 277° W 88 Elm 8 240° E 8			
C	Sugar 20 220° W 57 Hickory 13 255° E 46				I	Br Oak 12 254° E 591 with French "				P	1st a post in a mound of earth 1000. French 1st				V	Br Oak 10 224° W 24 Sug 13 220° E 40 Br Oak 14 269° E 46 French 12 270° W 92			
c	"				i	1st a post in a mound of earth 1000. French 1st				P	Br Oak 16 284° E 1060 Bottom Wood 8 272° W 982				v	Elm 8 225° E 60 Br Oak 12 240° W 7			
D	Br Oak 14 257° W 25 Br Oak 13 274° W 106				K	Br Oak 12 213° E 120 with French "				Q	Willow 8 25° W 384 Elm 10 247° E 279 Willow 6 270° W 571 no other near "				W	Sugar 10 273° E 36 Sug 12 255° W 19 Sug 12 261° E 45 Sug 13 260° W 53			
d	"				k	Ash 10 233° W 75 Br Oak 8 245° E -				q	Ironwood 7 212° W 21 Sug 8 223° W 40				10	Elm 11 259° E 44 Elm 17 221° W 68			
E	Br Oak 13 239° W 167 Br Oak 24 220° E 22				I	In Lake				R	Sugar 20 221° W 23 Ash 10 264° E 25 Elm 12 249° E 49 Sug 16 221° W 64				X	Elm 10 259° W 58 Elm 10 222° E 28 Br Oak 10 247° E 90 Br Oak 5 276° W 24			
e	"				l	Br Oak 20 225° E 179 Br Oak 20 218° W 174				r	Br Oak 5 265° E 212 Br Oak 6 214° W 181				w	Willow 7 2760° W 29 Elm 6 233° E 82			
F	Br Oak 14 262° W 66 Br Oak 10 211° E 23				M	Br Oak - 250° W 31 Br Oak 10 235° E 23 Br Oak 10 264° E 26 Br Oak 13 244° W 170				S	Sugar 14 236° W 44 Sug 16 259° E 52 Elm 12 266° E 23 Sug 11 215° W 63				Y	Sugar 9 247° W 24 Sug 23 272° E 56 Br Oak 12 233° E 29 Sug 13 212° W 114			
f	"				m	In Lake				s	Br Oak 6 287° W 102 Br Oak 4 176				y	Sugar 11 238° W 30 Br Oak 7 288° E 14			

Description of the Surface, Soil and Timber upon the Township Lines.	
Sec 36	Surface level, soil 1 rate very call n. 10 Elm 2 Maple + Willow
" 35	Surface level 2 rate soil very scattering Elm Ash and Oak
" 34	Gently rolling 2 rate Timber Sugar Oak Elm Lind Ironwood + Ash
" 33	Gently rolling 2 rate Timber Sugar Oak Elm Lind Ironwood + Ash
" 32	Gently rolling 1 rate Timber Sugar Oak Elm Lind Ironwood + Ash
" 31	Gently rolling 2 rate timber Sugar Lind Oak, Tamarac + Ash
Sec 36	Bottom on north for some good meadows in bottom soil 2 rate timber Ash + Elm
" 25	Gently rolling 2 rate timber Sugar Elm Lind + Oak
" 24	Gently rolling 2 rate timber Sugar Elm Lind + Oak
" 13	Gently rolling 1 rate timber very scattering Br and Br Oak
" 12	Gently rolling 2 rate timber very scattering Br + Br Oak
" 1	Gently rolling 1 rate soil Timber very scattering Br Oak
	Gently rolling 2 rate timber Oak Elm Lind Ironwood

Description of the Surface, Soil and Timber upon the Township Lines.

South Boundary	Sec. 36	Surface level, soil 1 rate very call n. 10 Elm 11 Maple & Willow
	" 35	Surface level, 2 rate soil very scattering Elm Ash and Oak
	" 34	Gently rolling 2 rate timber, Ash Elm & Willow
	" 33	Gently rolling 2 rate timber, Sugar Oak Elm Lind Ironwood & Ash
	" 32	Rolling 1 rate timber, Sugar Oak Elm Lind Ironwood & Ash
East Boundary	" 31	Gently rolling 2 rate timber, Sugar Lind Oak, Tamarac & Ash
	Sec. 36	Rolling on north pr. some good meadows in bottom soil 2 rate, timber Ash & Elm
	" 25	Rolling 2 rate timber, Sugar Elm Lind & Oak
	" 24	Rolling 2 rate timber, Sugar Elm Lind & Oak
	" 13	Gently rolling 1 rate timber, very scattering Br and Br Oak
	" 12	Gently rolling 2 rate timber, very scattering Br & Br Oak
	" 1	Gently rolling 1 rate soil timber, very scattering Br Oak

Figure 3.5 The first page of the descriptive sheet for T.116N R.23W. (Image from the MHS collections)

## **Chapter 4. The Paper Trail**

The individual surveying records described in the previous chapter provide information about the surveying process and either makes a reference to other records or provided some sort of clue about searching for other related records, a date for example. A contract, for instance, provides two dates, when the contract was awarded and a date when the work described in the contract was to be completed, in addition to the name of the deputy who was to perform the work and a location where the work was to be carried out. A township plat provides a location, several names, the deputies who performed the survey and the Surveyor General who certified the plat, and several dates, such as, when the surveys were carried out and when the plat was approved.

In the final analysis, however, all surveying records relating to a particular contract are linked through the correspondence files; the letters providing the glue that binds them and the individuals who created them in the surveying process together. The main problem, of course, is accessing the relevant letters written during the sixty-year period during which the surveys were carried out in Minnesota. But anyone interested in a particular deputy or a particular contract or even the survey in a particular locality need not browse through all the letters. Any letter contains information that is unique but, at the same time, provides information about other documents. All letters for example have a sender who is writing on a particular date from a particular location about a particular issue and a recipient in a particular location. We cannot know when the recipient actually gets the letter but often there will often be a response. Rarely, in fact, are letters between the surveyors general and the Commissioner not answered because acknowledgements are required, particularly in the case of letters that accompany plats, transcribed field notes, and other documents. In addition, of course, questions posed by the surveyor general often were usually answered. Similarly, letters from individuals to the surveyors general were generally answered, in part because the individuals posed questions. The most appropriate way to link together the various records relating to a particular contract is through the correspondence files. That is what this chapter will do.

The surveys described below are considered representative examples of the variety of paper chains or webs that can be constructed although it is unlikely that they cover the entire range of possibilities. Each paper chain provides a vignette of the public land surveys carried out in Minnesota. The deputies I have chosen include some of those about whom I have already written. Two of them, Henry A. Wiltse and Elisha S. Norris (Squires, 2008b), were employed by the Surveyor General of Wisconsin and Iowa. The others, George B. Wright (Squires 2010 123-143), William A. Burt, (Squires 2009), and those that appear in the contracts folders which I described earlier, George A. Ralph, Norris Y. Taylor (Squires 2012a), were employed by the Surveyor General of Minnesota. Be aware that the remainder of the report does not focus on a particular document or the surveying details contained in the document, but rather on the type of records.

### **4.1 Henry A. Wiltse (Fig. 4.1)**

The surveys completed by Wiltse are notable for two reasons. This was his only contract in Minnesota, his experiences – recounted in the Surveyor General’s annual report – convincing him to stop surveying. More importantly, it seems as though some of the records of his work were changed to reflect the fact that, after his survey, the St. Croix River became the boundary



between Minnesota Territory and the State of Wisconsin.<sup>34</sup>

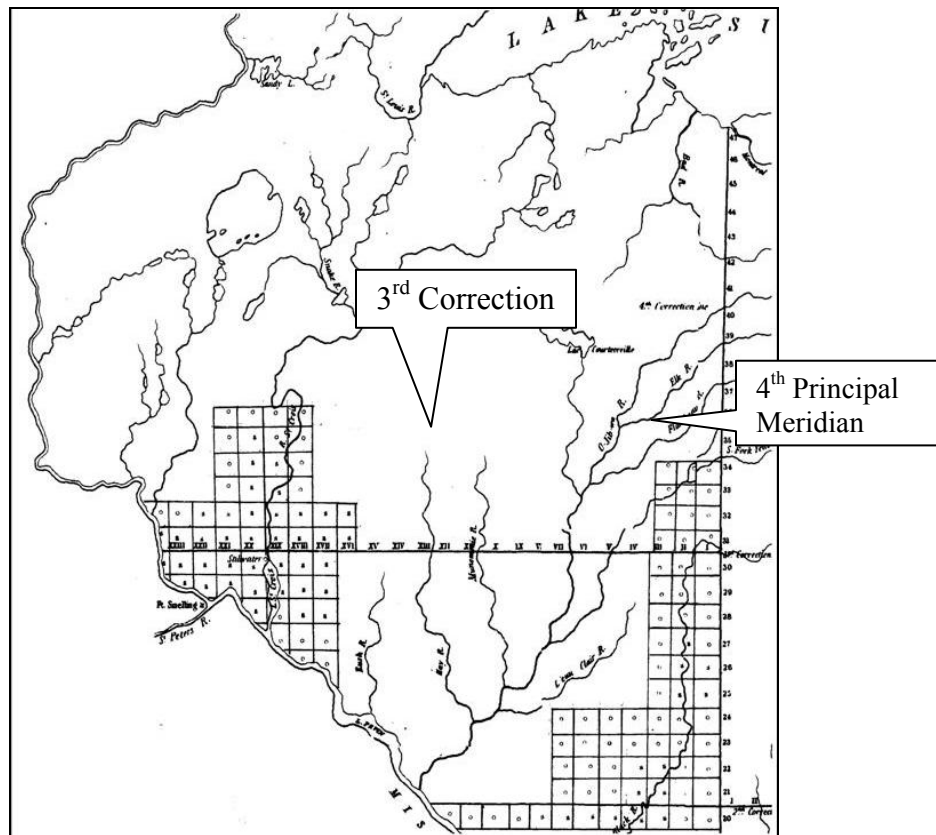


Figure 4.1 Henry A. Wiltse surveys under contract May 22, 1847. (United States. Congress. House, 1847)

On May 22, 1847, George A Jones, the Surveyor General of Wisconsin and Iowa, awarded Henry A. Wiltse a contract to run the 4<sup>th</sup> Principal Meridian to Lake Superior and the 3<sup>rd</sup> correction line from the northeast corner of T.30N on that Principal Meridian westwards to the Mississippi River under a contract chargeable to the Appropriations Act of March 3, 1847. On the same day Jones sent Wiltse the following meager special instructions,

In your survey of the Fourth principal meridian as set forth in your contract of this day, the utmost possible skill and care are required. This meridian line is to form the basis of the greater portion of the surveys in Wisconsin Territory embracing, probably the most valuable mineral district of the world. The following extract from my own instructions for the survey of this line, and by which you are to be strictly guided, will show you in what estimation it is viewed by the Commissioner of the General Land Office. "You will detail for this service one of your most competent deputies, in whose integrity the most implicit confidence can be placed, & instruct him to survey it with the greatest care, both as to course & measurement. This line should be double

<sup>34</sup> In 1863 Wiltse became Surveyor General of Wisconsin and Iowa.

chained and very clearly and distinctly marked, as it will be the guide, in all future operations in the region of country through which it passes.”

....

In your survey of the 3d correction parallel, where you arrive at the township corner dividing ranges 16 & 17 north of the said line, you are to take an accurate observation of the latitude at that point from which & other data in your possession you will calculate and make the requisite offset from the corner South of the correction line of the same denomination & establish the said corner.

Should Dr. D. D. Owen the present US Geologist for a district of Wisconsin Territory within which your survey lies, or at his solicitation one or more of his assts, desire quarters in your camp during the progress of your survey you will please extend them that privilege upon condition of their paying you a just proportion of the expenses of your party. (Iowa. Secretary of State Land Records. Record Group 81. Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook C, 1846-1848 156-157)

In his annual report, dated August 20, 1847, Jones noted that Wiltse had run 276 miles 37 chains 57 links at a cost of \$2,204.76 and had already returned the field notes to his office. (Fig. 4.1) Contained in that report is a letter, also dated August 20, in which Wiltse wrote of the difficulties in carrying out his survey. (United States. Congress. House 1847 94-97) Four days later Jones reported that he had sent Wiltse's account to the Commissioner of the General Land Office.

This would seem to be a fairly straightforward surveying contract. However, other documents indicate that after Wiltse completed the work, in fact after townships had been established and subdivided on both sides of the St. Croix River – perhaps even after title to the land in these townships had been conveyed by the United States government – his notes were altered to comply with existing federal law requiring that public land survey lines close against state lines when the St. Croix became the boundary between Wisconsin and Minnesota Territory in 1849. (Squires and Senjem, 2010) The correction line of over 272 miles was divided into a Wisconsin portion and a Minnesota portion, the Minnesota portion of the lines is contained in volume 132. (Bureau of Land Management, General Land Office Records, 2012) A study of the field notes suggests what happened and correspondence between Caleb Booth, the Surveyor General of Wisconsin and Iowa, and Justin Butterfield, the Commissioner of the General Land Office, provides some context. On July 9, 1849 the Commissioner wrote to Booth,

By the 1st Section of the Act of 12th June 1840 entitled “an act for the discontinuance of the office of the Surveyor General in the several districts” etc. it is provided that “whenever the surveys and records of any such district or State shall be completed, the Surveyor General thereof shall be required to deliver over to the Secretary of State of the respective States, including such surveys, or such other officer as may be authorized to receive them all the field notes, maps, records and other papers appertaining to the land titles within the same.”

In view of the provisions of law, it is requested that you will cause the field notes of the surveys in Wisconsin to be kept separate and distinct from those of the surveys in Minnesota and the same course should also be pursued with reference to the lands in Iowa, and Minnesota after the Northern boundary of Iowa shall have been established. Separate plats of the surveys will also be required.<sup>35</sup> (United States. National Archives, 1964 vol.13 175)

Booth replied on July 20,

During the years 1847 & 8 & before the question of boundary between Wisconsin and Minnesota was definitely decided, the surveys in the vicinity of the boundary were pushed rapidly forward – the subdivision being extended from the Mississippi river very nearly to the point where a line drawn due south from the Rapids of the St. Louis river will intersect the St. Croix river. The field notes & plats of these surveys, consequently, embrace the lands upon either side of the boundary in all instances where a township is traversed by the St. Croix.

I have already found it necessary to construct new plats and descriptive lists of thirteen fractional townships, lying East of the St. Croix and which are divided by that stream, for the use of the Register at the mouth of the Willow river in Wisconsin all of which had once been prepared and forwarded to the Register formerly at the falls of St. Croix but now at Stillwater in the Terr’y of Minnesota.

As there exists no immediate necessity for the separation of the original field notes and plats of these surveys, I presume it will be proper for me to direct a portion of the force of my office to that object, during the intervals of pressing, current duties. (Iowa. Secretary of State Land Records. Record Group 81 Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook D. 1848-1851 117-118)

Later, on November 11 in his annual report, he wrote, “During the quarter closing on the 30th ultimo, I directed a part of the regular force of my office to the separation of the field-notes and plats above named.” (United States. Congress. Senate 1850 49)

Volume 132 of the field notes contains two affidavits from Wiltse. The one at the front of the notes, witnessed by his crew, declared that he had run the line “from the line dividing Range 20 & 21 West to the Mississippi river”, an affidavit that was certified by Surveyor General Jones on August 20, 1847. However, there is a second certification, dated July 12, 1850 and signed by the successor to Jones in the Surveyor General’s office, Caleb Booth, for “that part of the Third Correction Parallel, lying between St. Croix river and the S.E. corner of T.31 R.21 west of the Fourth Prin. Mer., Terry of Minnesota.” In a third affidavit at the end of the notes, certified by Jones on August 20, 1847, Wiltse stated they were “the true and original field notes of the said survey” of his survey in Minnesota Territory, which, of course did not exist when he ran his line. The reference to Minnesota Territory also appears in the title page of the volume (Bureau of Land Management, General Land Office Records, 2012), curiously, placed in the middle of the

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<sup>35</sup> Minnesota Territory was established on March 3, 1849.

volume rather than in the front as it is in other volumes.

Perhaps most telling that the notes have been rearranged is the fact that the physical structure of the notes in volume 132 does not correlate with the dates of the surveys contained in the notes. The dates recorded in the notes show that Wiltse ran the line west from a meander corner post on the right bank of the St. Croix west to the Mississippi from August 10 to August 16. However they are arranged in the volume showing that he ran the surveys from R.21 -24 first and then R 19-20. The notes have all the appearance of having been removed from an earlier book of field notes, which we suppose might have contained Wiltse's work both east and west of the River. Wiltse's affidavit in volume 132 must have been rewritten and the certified by Booth in 1850.

#### **4.2 Elisha S. Norris (Squires, 2008a, 2008b) (Figs. 4.2, 4.3)**

On June 2, 1853 Warner Lewis, Surveyor General of Wisconsin and Iowa, awarded Elisha S. Norris a contract to run the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Guide Meridians and portions of the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> standard parallels in Minnesota Territory west of the Mississippi River. The contract, chargeable to the appropriations act passed March 3, 1847, was the first to be made in Minnesota requiring the deputy follow the instructions contained in the Manual issued by the General Land Office two years earlier to control the surveys in Oregon. These surveys would provide the surveying framework that characterized all future surveys in Minnesota west of the Mississippi River. (Squires, 2008b)

Lewis issued extensive special instructions to Norris on June 2, 1853.

The contract into which you have this day entered embraces in part the survey of certain lines designated by the Commissioner of the General Land Office as Guide Meridians No. 1, 2 & 3 – The Parallel of 43° 30' North Latitude which forms the Boundary between the State of Iowa & Territory of Minnesota will form the base for all surveying operations in said Territory on the West side of the Mississippi river, and from the great care with which it was run & marked will compare favorably with any other base for surveys in the United States.

In view of the fact that it has been decided that the surveys North of said Base shall be conducted in accordance with the method prescribed for the public surveys in Oregon a copy of the instructions to the Surveyor General of that district giving full directions as to the manner in which the lines shall be run with all the particulars as to the monuments is herewith furnished you and the portions thereof which refer more particularly to your work & which you are implicitly to follow you will find enclosed in black lines.

The surveys in Minnesota will all count from the Arkansas Base that is the Townships will count in continuation of those in Iowa while the Ranges will number from the Fifth Principal Meridian.

You are to commence your survey of Guide Meridian No. 1 at the corner to Range 10 & 11 and from said corner run on a true Meridian due North (establishing at 40 and 80 chs respectively the proper miles and half mile corners as you progress) to the

Mississippi river. By reference to the accompanying map however which has been carefully compiled in this office it will be seen that said Meridian will strike the Southern boundary of the Reservation set aside for the use of the Half Breeds of the Sioux Nation under Treaty of July 15th 1830 before it reaches the river.<sup>36</sup> Should this prove to be correct you are to carry said Meridian no farther than the limits of said reservation; but at the point of intersection, plant a monument, take the proper bearings within your own work, and give the intersection with the nearest corner planted on the boundary of said Half Breed tract.

Guide Meridian No. 2 you will start at corner to Ranges 17 & 18, and surveyed in like manner to the Mississippi River which it will probably reach about Township 115.

Guide Meridian No. 3 will be started from corner to Ranges 24 & 25 and be surveyed due North to the Mississippi River. It is required by the Commissioner that these lines be double chained, one set of chainman following the other, and that monuments planted therein shall be made in the most enduring manner and in strict conformity to the accompanying printed instructions.

After you have run and marked Guide Meridian No. 1 you are required to survey and establish from the corner to Township 104 & 105 (on) said Meridian a standard parallel or correction line due East to the Mississippi river & when you bear in mind the fact that the Townships below will have to close to this parallel in the manner and with the precision indicated by the accompanying diagram A you will at once see the importance of having said line accurately run with respect to course and measurement.<sup>37</sup>

Twenty four miles North or at corner to Towns 108 & 109 (should your Meridian extend so far North, if not, from a point opposite on the boundary of the reservation) you are to run due East another parallel with the same care and accuracy as the first.

The field notes of the above lines with Guide Meridian No. One you are to return to this office property attested with the diagram so soon as the same shall have been completed.

After you have completed the survey of Guide Meridian No. 2 you will from corner to Townships 104 & 105 (on) said Meridian run East from corner to same Townships in Guide Meridian No. One, and returning give the corrected notes to the same. At corner to townships 108 & 109 the same process will be followed; and at corner to Townships 112 & 113 you will run another parallel to the Half Breed Reservation closing regularly to the same and establishing the proper monuments.

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<sup>36</sup> Accompanying map not seen

<sup>37</sup> Diagram A not seen.

Of Guide Meridian No. 2 & the parallels mentioned above you will make a second return to this office as early as practicable.

After the completion of Guide Meridian No. 3 you are to survey in like Manner the parallels which have their starting points at corner to Towns 116 & 117 and 120 & 121. The printed instructions in regard to monuments and all other particulars you will find full and ample and as they are entirely new to the deputies of this office, it is recommended that you use great diligence in becoming master of their contents. I would again call to your attention the fact that too much care cannot be taken in the execution of this work – The price that you are paid is sufficient to ensure the greatest accuracy attainable and should hereafter errors be detected you will recollect that by the terms of your contract you are responsible for the same. It is my earnest desire that the work should be well done & so far as you are concerned I have no fear of the result.

It is expected that the whole will be completed with as much dispatch as accuracy will warrant.

Should the correction which starts from Guide No. 3 corner to Township 120 & 121 intersect the isolated survey made in connection with the reservation at Fort Snelling (which matter has been verbally explained to you) of course you will close to the boundary of said survey without continuing your line farther and observing in all cases to take bearings only in your own work & give the intersection with the nearest corner planted on such survey or Reservation.

It is also required that wherever your lines intersect the Mississippi river you will show the connection with some corner of the surveys on the opposite side of the river in order that the relative positions of the surveys on the E & W sides of the Mississippi may be truly shown. (Iowa Secretary of State Land Records, Record Group 81 Letters Sent by the Surveyor General of Wisconsin and Iowa, Letterbook Volume F)<sup>38</sup>

Four days later, on June 6, Lewis wrote to Joseph Wilson, the Commissioner of the General Land Office, explaining the instructions he had given Norris, and importantly, for the documentary record of the surveys, noted that he could not find in either in the Oregon Manual nor in the Commissioner's instructions any provision for the convergency of the Meridians.<sup>39</sup> On June 16 Wilson replied that the Manual explicitly stated Standard Parallels should be run every 24 miles as a "practical base from which the surveys (made from it) are to take a new start at every twenty-fourth mile, whereby the effect of the convergency of Meridian Lines is very much restricted" and so Lewis had instructed Norris incorrectly. (Squires, 2008 30) He also made

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<sup>38</sup> This is a copy of a letter transcribed by Don Borcharding several years ago from a letter in the cited letterbook. Unfortunately, the portion of Letterbook Volume F, which should contain letters sent by the Surveyor General between May 10, 1853 and December 5 1853, is missing.

<sup>39</sup> Id

reference to a diagram B which showed the Guide Meridians and Standard Parallels that were to be run.<sup>40</sup> (Squires, 2008b 31) (Here is a case then when there are four sets of instructions; general instructions and specific instructions from the Surveyor General to the deputy; instructions from the Commissioner of the General Land Office to the Surveyor General; and amended special instructions from the Surveyor General to the deputy. (Squires, 2007)

Lewis relayed the amended instructions to Norris in a letter dated June 24, 1853, writing,

I have just received further instructions for the Commsr of General Land Office which requires an alteration of your instructions in relation to the survey of Guide Meridians & Standard Parallels and you will receive diagrams marked A & B which with the following will fully illustrate the change.

He says “In order to carry out the Oregon method in Minnesota” “your guide meridian’s (will) necessarily have to be offsetted so” “as to admit the full measure of six miles for townships on the Standard parallels” – viz

Guide Meridian No. 1 will have to be offset 40 chains (on first correction) (to the East) and No.2 – 20 chains to the East at every 24<sup>th</sup> mile where it will be intersected by the respective standard parallels, whilst Guide Meridian No.3 will be run all the way without offsets (see diagram B).

It is supposable that Guide Meridian No. 1 and the parallels E. of it are already surveyed and that you have started at No. 2. If you can correct your work without serious trouble and expense, it would be a very great accommodation to this office, give the commsr much satisfaction, and will not fail to be remembered to your advantage hereafter; but if it is impossible to make the corrections I cannot require you positively to carry out these instructions as no compensation will be allowed for the same. To make said corrections you will have to move all your comers on Guide Meridian No. One north of the first parallel & to the second 40 chains East and all your section corners on the 1<sup>st</sup> standard parallel East of the Guide Meridian No.1 will have to be changed to  $\frac{1}{4}$  corners as the Meridian offsetted (sic) as directed would start at the 1<sup>st</sup> post East on your 1<sup>st</sup> parallel and the qr corner to section corners (whilst on the second correction parallel to the corners would have to be demolished and others established) To establish the line from A to b, the point b must be determined by running a due North line (marked in blue on diagram A) with precise measurement of twenty four miles starting from point a in the Iowa boundary; and then, from the point b run a trial line Westward to A, carefully measuring the same & setting temporarily the mile and  $\frac{1}{2}$  mile corners and afterwards correcting and carefully remeasuring back on the line & establishing the same & constructing the true corner boundaries from A through b to the Mississippi river.

The portion of the fourth standard parallel between the 3<sup>rd</sup> Guide Meridian & the

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<sup>40</sup> I have a copy in my possession but I do not know its source. Diagram B might be the map that to which the Commissioner was referring in his letter of June 2.

Mississippi river c to d will also be governed by the method above mentioned, but the lines e to f, g to h, i to k will be run at once from the appropriate Meridian due East to the river, and to the half-breed reservation without a random.

The diagrams sent here are the originals & must be carefully preserved & returned to this office as time would not admit of their being copied.<sup>41</sup>

Whatever notes you may have ready to return in conformity to your previous instructions can be sent by the bearer, as well as your report on the character of the country, extent & settlement with any other information which you may have been able to obtain which will be of service to this office in its future operation.<sup>42</sup>

On the same day, June 24, Lewis wrote to Commissioner Wilson of his action, adding, and his frustration showed,

From the map & accompanying instructions of 16<sup>th</sup> May, I could see nothing that would indicate that the Guide Meridians were to be offsetted, and as they were entirely different from any instructions I have ever seen before, I did not feel authorized to deviate in the slightest from what I conceived to be the strict letter and spirit of them.<sup>43</sup>

By then Norris, along with his crew, four chainmen – Thomas Simpson, J. O. H. Aveline, A. F. Johnson, and W. Kendall – axeman Sidney Wells, and flagman A. Foster, according to the field notes, had been in the field over three weeks. He obviously received the amended instructions because he made the necessary offsets.

On July 28 Norris sent his first returns to Lewis, writing,

Accompanying this, you will receive field notes of Guide Meridian No.1 and also No.2 through Townships 101, 102, 103, 104 North and the first correction from the Second Guide Meridian and the second correction from the first Guide Meridian East to the Mississippi River and also the township line Between Ranges 4 & 5 up to the first correction. (Iowa Secretary of State Land Records. Record Group 81 Iowa State Archives. Letters Received Box 60)

Lewis appointed William J. Neely to examine the lines established by Norris, and on August 17, Neely reported that there were errors in the surveys, closing with the statement,

In view of the error as Shown by (such) diagram I would suggest that a re-survey should be made of such lines particularly as would be likely to Extend any Errors whether resulting from course of measurement. (Iowa Secretary of State Land

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<sup>41</sup> Diagram not seen.

<sup>42</sup> See footnote 38.

<sup>43</sup> See footnote 38.



Records. Record Group 81 Iowa State Archives. Letters Received Box 60)<sup>44</sup>

On August 18, Lewis sent a scathing letter to Norris about the errors in his work ending with,

Although this office has been put to great inconvenience and the public interest abused in consequence of the delay and errors above alluded to, still I have entire confidence in your integrity and skill as a surveyor and sincerely hope that your work will be returned at an early day as to meet the expectations of this office.<sup>45</sup>

A few days later, Lewis sent a letter to deputy John Ball, who was already establishing township exteriors, authorizing him to correct the surveys made by Norris, writing,

You are hereby authorized to correct the work of Mr. Norris according to the accompanying diagram which you will return by Mr. Neely to this office. You will also find Mr. Neely before you start to make the corrections; his instructions correspond with yours. You or Mr. Neely will endeavour (sic) to see Norris & if in case he is willing to make the corrections you will give up the job to him. Please tell Mr. Neely to see that the remainder of Norris' work is correct and if it is not Mr. Neely must see that he does it & that all his work is strictly standard in measurement.<sup>46</sup>

The following month examiner Neely wrote to Lewis that he had discovered more errors in the surveys of Norris, some of which had already been corrected by Ball.

In addition to the lines reported in my last report as having been erroneously surveyed, I would beg leave to report that Guide meridian No. 2 from State Boundary up to Standard Parallel No. 2 was found erroneous both in measurement and course, and that the same has been corrected together with those formerly reported viz. Guide meridian No.1 & Standard Parallel No.1 from Guide meridian No. 2 East to the Mississippi River have all been corrected by re-running the same under special instructions to John Ball Esq. U.S. Dep. Sur. the field notes of which have been furnished you.

Where the work had been re-run this far Mr. E.S. Norris Esq. Dep. ... came & commenced the Survey of Guide meridian No.1 North of Standard Parallel No.1 But with such errors in course and distances that it was impossible for Messrs Ball & Jones to close to (said) Meridian. I immediately to avoid further delay had the same run by John Ball Esq. & herewith furnish the field notes of same line.

In consequence of these errors in Meridians No.1 & No.2 up to Standard Parallel No.2 (illegible word) will have to be re-run to their intersections with the Mississippi River which will be soon done by Mr. Norris.

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<sup>44</sup> The way in which the deputy's surveys were examined is a topic that needs exploration.

<sup>45</sup> See footnote 38.

<sup>46</sup> See footnote 38.

I have made an examination of different portions of Messrs Ball's and Jones Township lines from the Guide Mer. No.2 East of the Mississippi River & South of Standard Parallel No.1 & find them correct. Lines well run & marked corner posts & trees marked mounds built trenches & Pits dug as per instructions. (Iowa Secretary of State Land Records. Record Group 81 Iowa State Archives. Letters Received Box 60.)

Neither Ball nor another deputy, William Jones, who was also establishing townships, could close their lines against the Guide Meridian No.1 north of Standard Parallel No.1, and so Neely had Ball re-run a portion of the line under special instructions and sent Ball's field notes with the letter.<sup>47</sup> (Iowa Secretary of State Land Records. Record Group 81 Iowa State Archives. Letters Received Box 60)

On September 23<sup>rd</sup> Ball wrote to Lewis of his efforts to correct the lines run by Norris,

(A)fter sending to your office by Mr. Larmier the field notes of my Township lines & the field notes of Guide Meridian No.2 & the 1st Standard Parallel I commenced to Township but could not close on Mr. Norris last corrected post Guide Meridian No.1 of Township 105, 106, 107 & 108. Mr. Neely examined it & found it incorrect & requested me to run it up & I did so & found it badly measured & part of it badly sighted in consequence of Mr. Norris running it up in cloudy weather. I will therefore send the field notes of the same survey to your office by Mr. Neely together with the other corrections of the Meridian in Township 101, 102, 103 & 104 & 1st Standard parallel of Ranges 4, 5, 6, 7, 8, 9 & 10 & shall now proceed with my Township lines as speedy as possible hoping that Mr. Norris will have the patience to run the Standard Parallel No.2 correct. (Iowa Secretary of State Land Records. Record Group 81 Iowa State Archives. Letters Received Box 60)

Three days later, on September 26, 1853, Neely reported that Norris had corrected his work. (Iowa Secretary of State Land Records. Record Group 81 Iowa State Archives. Letters Received Box 60)

The next month, on October 23, Lewis made his annual report to the Commissioner noting some of the difficulties with the surveys by Norris and again blaming the lack of clarity in the instructions given by the Commissioner. In the report he noted that Norris had made an advance return consisting of lines totaling 226 miles 52 chains 1 link for which the deputy would receive \$1770.09.

Glossing over some of the problems with the surveys carried out by Norris he wrote,

As soon as the necessary arrangements and calculations could be made, after the receipt of your instructions of 16th May last, I entered into a contract with E. L. Norris, deputy surveyor, for the establishment of guide meridians Nos.1, 2, and 3, and the proper standard parallels east of said meridians Nos.1 and 2, in the Territory of

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<sup>47</sup> The special instructions have not been seen.

in this portion of my district have not advanced with such rapidity as might have reasonably been expected. Having required to conduct them after the mode prescribed in Oregon and said method, being entirely new to the deputies in this office, and, moreover requiring the greatest accuracy, it is not surprising that some delay should have occurred, and errors have occasionally been made. Owing to a misconception of your instructions, a great part of the work first done by Mr. Norris has to be re-run. This was occasioned by absence of allowance for the convergency of meridians, which your instructions, and the diagram exhibiting the order of survey, failed to set forth, and from examination of which I was led to infer that a new base was designed after the survey had progressed north to a point where the Mississippi river (the main channel of which is the present dividing line between East and West Minnesota) will cease to be a meandered stream; and that, thereafter, the surveys east and west of said river would be all conducted in the same order. On reception of your letter of the 16th June, stating that such was not your intention, and requiring meridians Nos.1 and 2 to be offsetted, I at once had the necessary corrections made, and feel confident that, for the future, the surveys will progress in this Territory without impediment.

Already have returns been made and submitted of guide meridian No.1, to the Mississippi river, with standard parallels, Nos.1 and 2, east of said meridian; the field notes of guide meridian No. 2 have also been received as far north as the corner to townships Nos. 108 and 109, and of the first standard parallel east of said meridian, with all proper township boundaries east of said guide meridian No.2, to the Mississippi river, and south of the first standard parallel. (United States. Congress. Senate 1853 221-222)

On January 18, 1854 Lewis sent the following letter to Wilson, which completed this contract.

Please find enclosed two diagrams, one representing the survey of a portion of Guide Meridian No. 3, the other representing the survey of part of the Guide Meridian No.2 with Standard Parallels No. 2 & 3 between Guide Meridians No 1 & 2, also the account of E S. Norris for performing the service.

Mr. Norris requests a draft for the amount of the accompanying account may be forwarded to him at Dubuque Iowa. (Iowa Secretary of State Land Records. Record Group 81 Iowa State Archives. Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook E 1853-1857 170)

Volume	Line segment	Survey Date
8	1-3	June 20-28, 1853
13	4-7	June 30-Sept. 4, 1853
12	8-10	August-Sept. 30, 1853
27	11-12	Sept. 17-22, 1853
22	13-14	Sept. 24 – Oct 3, 1853
33	15-16	Oct 6 – 18, 1853
52	17-22	Oct. 14 – 29, 1853

Figure 4.2 Norris field notebook volumes under contract June 2, 1853. (Squires, 2008c 27)

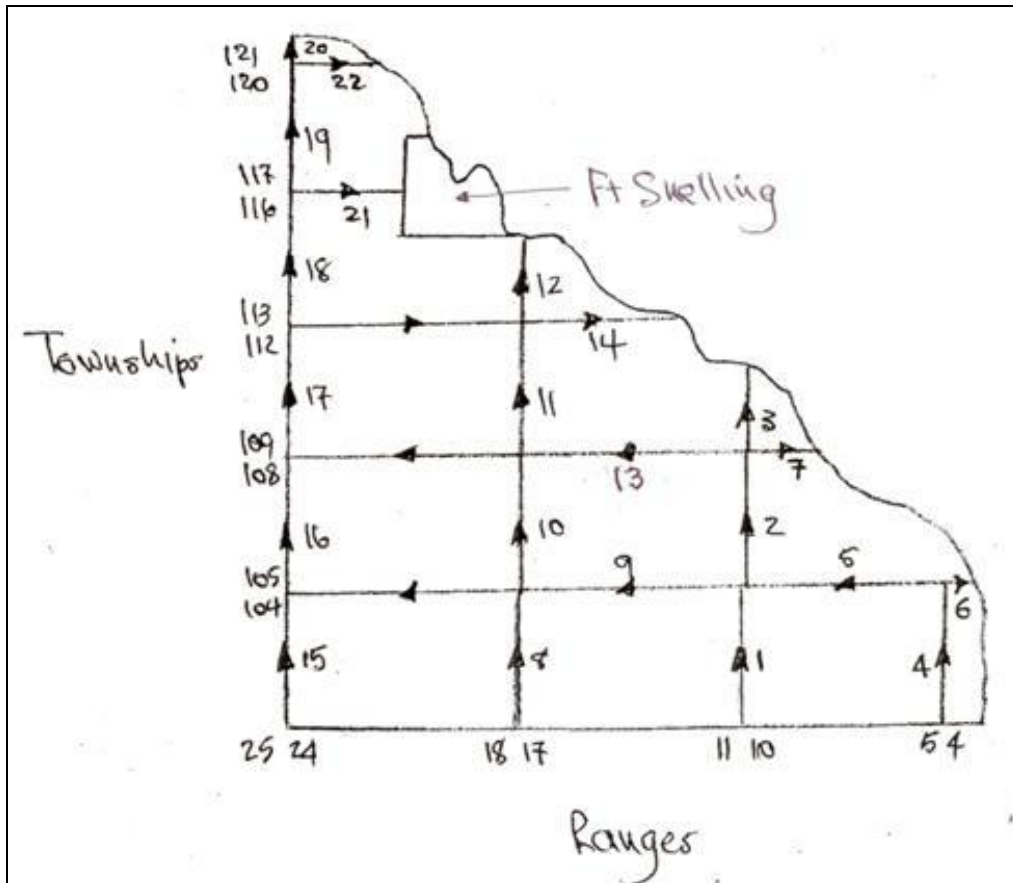


Figure 4.3 Lines run by Norris under contract June 2, 1853. (Squires, 2008c 31)  
(Lines not numbered run by other deputies)

#### 4.3 William A. Burt (Squires, 2009; Figs. 4.4, 4.5)

In his annual report dated October 21, 1855 Warner Lewis, the Surveyor General of Wisconsin and Iowa, drew the attention of Thomas Hendricks, the Commissioner of the General Land Office, to the area ceded by the Chippewas two years previously in northeastern Minnesota, writing,<sup>48</sup>

In view of the great interest manifested in this section, not only by actual settlers, but by people of the east, it is necessary that provision should be made without delay for its early survey.

... I would recommend that the line, between ranges 15 and 16, be run on a true meridian, from the corner to townships 41 and 42 and that it be extended for ten

<sup>48</sup> The treaty, signed at La Pointe, Wisconsin, on September 30, 1854, was ratified by the Senate January 10 1855. In this treaty two reservations were established, one for the Fond du Lac band of Chippewa and the other for the Grand Portage band of Chippewa.

townships, north of the corner to townships 46 and 47; from thence a line run due east would intersect the lake below the mouth of Pigeon river, and from the lines thus established the surveys could be closed to Lake Superior. This would, I think, cover all settlements at present made, and is all that, in my opinion, is absolutely required to be done the next season. (United States. Congress. Senate 1856 252)

At the same time he warned the Commissioner of the problems of surveying in that portion of Minnesota. He stated,

You are, without doubt, aware that in this high northern latitude every moment of favorable weather must be improved in prosecuting surveys, from the fact that little reliance can be placed upon the needle, owing to the presence of magnetic trap rock, so prevalent in this section. The solar compass, therefore is the only instrument that can be used; and as the solar apparatus can only be employed in bright weather, and not then through the entire day, at certain periods, the whole season, which is but short at best, is greatly reduced. (United States. Congress. Senate 1856 252)

On April 8, 1856, John M. Moore, Principal Clerk of Surveys, wrote to Lewis, with specific instructions for surveying in the Lake Superior region.

As the surveys in the Lake Superior region should be commenced at the earliest practicable period of the coming season, you will therefore make your preparations accordingly for extending a meridian line from the corner of township 41 & 42 as far as Township 56N and from the North East corner of township 55 & 56 respectively cause correction parallels to be extended East to Lake Superior – the convergency in these high latitudes rendering two such parallels expedient. In extending such Meridian you will order it to be duly offsetted from such Corner to make due acreage allowance for convergency – and the same also between the parallels – and on such meridian and parallels the proper quarter section, section, and township corner boundaries, will of course be duly established in the most permanent manner.

The townships from No. 42 to the St. Louis river, Minnesota being all fractional, will when subdivided, be made to close on the boundary line between Minnesota & Wisconsin as will also those portions of the same fractional townships lying on the Wisconsin side.

On the north shore of Lake Superior and on the left bank of the St. Louis river, the exteriors of as many townships are to be contracted to be surveyed as will embrace existing settlements, and as many of the same to be subdivided, the coming season as can be accomplished by the most active energies of your deputies. (United States, National Archives, 1964 vol.17 66)

On May 21, 1856 Lewis awarded William A. Burt a contract to start the surveys in northeastern Minnesota by running an independent meridian, the 6<sup>th</sup> and 7<sup>th</sup> correction lines from it to the Lake Superior, and township exteriors, all of which were to be paid for out of the Appropriation of July 8, 1856. Five days later, he wrote to Burt,

I herewith return you one copy of your contract and Bond approved, with diagram, of the district assigned you, blanks for your assistants' oaths, blanks books for your field notes, and my printed "General Instructions" for deputy surveyors.<sup>49</sup> By reference to said diagram you will perceive that you are to commence the survey of your district at the corner to Townships No. 41 & 42 North, Rgs 15 & 16 West 4th Mer., and from thence run an independent meridian north to the corner to towns 56 & 57 closing the frac. township lines east of you to the boundary between Wisconsin & Minnesota, (indicated on the diagram by a black line) (the field notes of which you will also find enclosed) and noting your intersections with the nearest corner thereon precisely as you would in closing to a correction line.

You are also to survey correction lines from the corner to townships No. 53 & 54 and 56 & 57 respectively due East to Lake Superior making the usual allowance of 3 chs. on the West half of sec. 31 in each township to provide for convergency. Your township lines closing to the left bank of the St. Louis river & to Lake Superior may be run South & East where necessary. It is expected you will make returns of the work at the earliest practicable day, with a full report as to the character of the country, extent of settlement & c. and indicate those townships that in your opinion should be earliest subdivided, also as to the necessity for townshipping the tract situated between the two correction parallels which you are to survey. If possible an advance return of part of the work should be made, in which event it will be necessary to forward a signature for your acct. with directions where to send a draft. (Iowa Secretary of State Land Records. Record Group 81 Iowa State Archives. Letterbook E 1853-1857 549-551)

In the letter Lewis also asked Burt to survey the boundaries of the Fond du Lac and Grand Portage Indian reservations, if the season was "not too far advanced."

Burt carried out his work in several stages. First he ran the Independent Meridian from T.41/42N R.15/16W to T.52/53N R.15/16W. (Squires, 2009, Fig. 4.4) He then established township exteriors between the Meridian and Lake Superior north of the St. Louis River running township lines further north than he had run the Meridian. Returning to the Meridian he ran six miles north and then the 6<sup>th</sup> Correction Line to the Lake followed by a township exterior to the Lake. He then continued the Meridian northwards to T.56/57N R.15/16W and finally ran 24 miles of the 7<sup>th</sup> Correction Line.

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<sup>49</sup> Diagram not seen

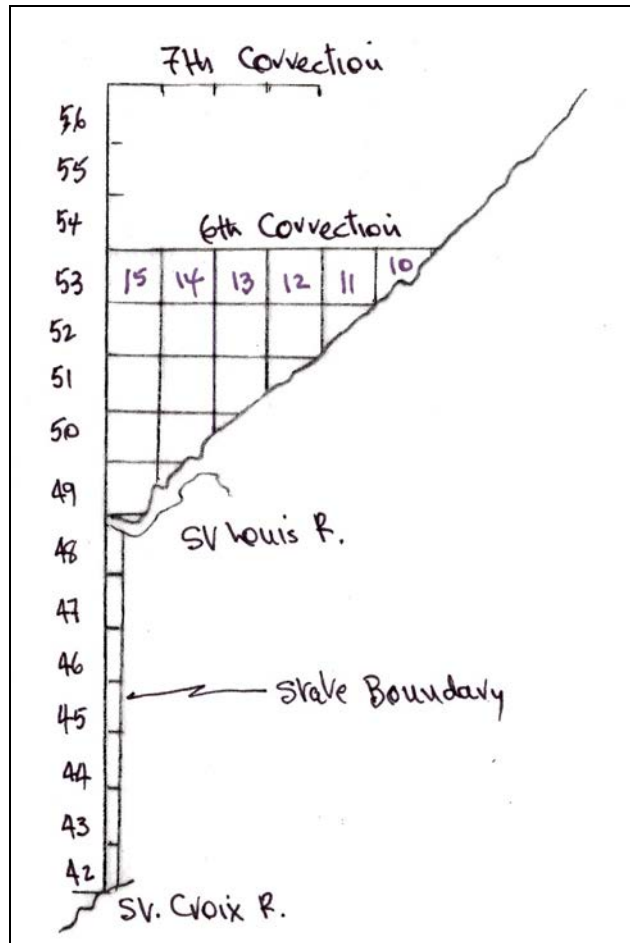


Figure 4.4 Lines established by Burt under contract May 21, 1856. (Squires, 2009 28)

Lewis wrote to Burt, then in Superior Wisconsin, on June 22 concerned about whether Burt would be able to survey the reservation boundaries, although noting, presumably in response to a letter from Burt that has not been seen ,

The object of adding 3 chains to the West half of Sec. 31 on the correction lines is as you are aware to provide for convergency of Meridians. Your suggestion is therefore approved. (Iowa Secretary of State Land Records. Record Group 81 Iowa State Archives. Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook E 1853-1857 556)

On August 5, 1856 Lewis was able to write to Hendricks, the Commissioner of the General Land Office, "In compliance with your request I would report that I have contracted for the survey of the district on the St. Louis river & lake Superior mentioned in your letter of the 8th of April last ...." (Iowa Secretary of State Land Records. Record Group 81 Iowa State Archives. Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook E 1853-1857 556)

Later that month, on August 26, Lewis wrote again to Burt,

Your letter of the 18th instant with field notes has just come to hand.<sup>50</sup> You state that “great anxiety is manifested to have certain townships on the shore of Lake Superior and the Louis river surveyed.” & that you designated the same in a former letter. Said letter has never come to hand. In order however that the wants of settlement may be accommodated I hereby authorize you to survey and subdivide into sections such townships as in your opinion it is most desirable to have surveyed, *provided you can do so without interference with your present district and complete the whole by the 1st Febry.*<sup>51</sup> I have for the purpose of facilitating matters forwarded blank contracts & bonds which you can sign and forward to your friends at home for their signatures to the Bonds and you will be pleased to instruct them to forward to this office without delay and at the same time you can designate the townships which you intend to survey. .... (Iowa Secretary of State Land Records. Record Group 81 Iowa State Archives. Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook E 1853-1857 568)

The following month, on October 10, Burt then in T.52N R.10W, wrote

If it is thought best in view of the necessity of the work to have the subdivision lines surveyed with the magnetic needle, using the “Solar” instrument whenever practicable I will with the assistance of Mr. E.C. Martin, or some other reliable Deputy Surveyor, during the approaching inclement season, endeavor to survey and subdivide into sections the following Fractional Townships Viz: Townships 48 and 19 of Range 15, Town. 51 of Range 12 and 13, Town. 52 of Ranges 10 and 11 and 12, Town. 53 of range 9 and 10 4th meridian Minnesota Tery Fr Town 52 of Range 10 is already surveyed. Diagrams of such Towns as have been returned to your office will be needed.

Perhaps it may be well to mention at this time, that settlements are being made nearly all along the N.W. Shore of L. Superior to Pigeon river. Many of the settlers are anxious to have the land fully surveyed at once. The country is undoubtedly rough, thicket and mountainous and magnetic disturbances so frequent that very little reliance can be placed on the use of the magnetic needle. From the pasts season’s experience here I would say the Surveyor should be on the ground early in the spring, and his compensation at even augmented rates beyond that already provided for by law. (Iowa Secretary of State Land Records. Record Group 81. Iowa State Archives. Letters Received Box 53)

In his annual report dated October 13, 1856, Lewis noted that he had received and already forwarded some of Burt’s work to Washington. He wrote,

In the Chippewa Cession the district of Township lines indicated by your letter of August 8 instructions was let to Mr. William Burt who has already executed a portion of the work which has been forwarded for your approval. Special instructions were

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<sup>50</sup> Letter not seen.

<sup>51</sup> Italicized words erased in pencil along with a notation “omit”.



also prepared for the Survey of the Indian Reservation in the vicinity but owing to the inability of the Indian agent to attend to the business I fear that it will be impossible to execute the surveys this season. I am confident however that Mr. Burt will do all in his power to comply with the wishes of the department. (United States. Congress. House 1856 252)

The following year, on June 21, 1857 Lewis wrote to Charles L. Emerson, newly appointed Surveyor General of Minnesota,

Your letter of 15th is received. In reply thereto I have to state that according to the Comms instructions of the 8th of April last (copy of which was forwarded to you on Saturday) an Independent Meridian was started from the N.E. corner of Town 41 Range 16 West 4th Mn and surveyed due North to the corner of Town 56 & 57 & from the corners to Town 53 & 54 respectively. Correction lines were run east, the first named to Lake Superior & the last to the corner of Ranges 11 & 12 (copies of the field notes of which were all forwarded to you on the 19th inst.)

As you have been pleased to ask my views in relation to continuing the surveys on the north shore of lake Superior, I would state that in my opinion it would be advisable to start another Independent Meridian at the corner to Ranges 8 & 9 on correction line between Town 56 & 57 (or any other township corner further East) and run it north a sufficient distance to cover any surveys you may desire to make, starting correction lines as suggested by the Comms at the corner to every third township

This is merely a continuation of the course already adopted, and I think it will enable you better than any other to continue the surveys in the manner you have designated.

Any papers or information in the possession of this office that you may wish to acquire shall be promptly furnished on your application. (Iowa Secretary of State Land Records. Record Group 81 Iowa State Archives. Letters Sent by the Surveyor General of Wisconsin and Iowa Letterbook E 1853-1857 20)

In his annual report dated October 12, 1857 Lewis, in his summation of the year's work, particularly noted Burt's surveys,

The above embraces part of the work executed by William Burt, esq., deputy surveyor, bordering the north shore of Lake Superior, about which so much interest has been manifest. A glance at the plats already forwarded to your office is sufficient to attest to the value of this entire district, many townships of which are wholly claimed, and the settlers, I am informed, have been waiting patiently the opening of the land office to prove up and obtain legal possession of their claims. The remainder (four townships) of Mr. Burt's work has been returned, examined, platted, and are now being copied; and the plats of his whole district (except four townships) have been transmitted to the proper land office. (United States. Congress. House 1856 138)

He reported that Burt had made an advance return of 133 miles 50 chains 30 links at a cost of

\$1,468.28 and that he had sent his account to Washington on October 6, 1856. He noted that the independent meridian extended 66 miles. (United States. Congress. House 1857 146)

One interesting feature of Burt's field notes (Fig 4.5) is that although the volume contains the customary certification by the deputy, which is notarized, there is no certification by the surveyor general.

Vol.	Type of work	Dates from the notebooks	Comments
149 <sup>52</sup>	Meridian T42N–T52N	June 14-July 9, 1856	Termed “Independent Meridian”
160	Exteriors	July 18-August 11	Remeasurement November 1856
161	Exteriors	August 12-September 22	Additional work, October 9
162	6 <sup>th</sup> Correction	September 25-October 9	
165	Meridian T53N–T56N 7 <sup>th</sup> Correction	September 24-October 15 October 15-28	Not termed “Independent Meridian”

Figure 4.5 Field notes made by William A. Burt under contract May 21, 1856.

#### 4.4 George B. Wright (Squires, 2010 123-143)

George B. Wright was a prolific deputy surveyor in west-central Minnesota, running exteriors and subdividing townships on his own and in partnership with four other individuals. He received his first government contract with Isaac Banker on July 23, 1862. Under the instructions contained in the contract, although not present in the appropriate letterbook, the two were to survey twelve townships including any islands in the Mississippi River. In addition, they were to survey one township under special instructions.

On July 29 the Commissioner approved the contract accepting the Surveyor General's assertion of the competency of the two men “altho’ we cannot identify them as having ever been in the service of the government in connexion with the surveys of the public lands with the exception of a limited service of the former on Wellman & Smoot contract.” (United States. Surveyor General of Minnesota Letters Received vol. XLIX 1862 181)

A few days later, on August 11, 1862 Washburn wrote to Wright and Banker,

The contract executes by you on the 23d ult. (in quadruplicate) for the subdivision of 12 Tps on the Crow Wing and Mississippi rivers having been approved by the

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<sup>52</sup> Volume 149 carries the heading “Survey of Independent Meridian Made by William Burt under contract dated May 21, 1856” On page 2 of the field notebook is a note. “Mr. Miller (flagman) left my party soon after entering the same, on account of being sick, and unable to work and a flagman being of no use in the thick timbered country, no one has been appointed to fill Mr. Miller's place.” In his work he constantly noted that he compared his chain with a standard chain. Only Burt's affidavit is present in the book, the affidavits of the rest of his crew are missing.

Commiss<sup>r</sup> of the General Land Office I have appended my signature thereto & herewith return you one copy thereof.<sup>53</sup>

The contract requiring that the survey shall be made in strict accordance with the requirements of the “Manual of Surveying instructions” and your experience on the public surveys in the State renders any special instructions from this office as unnecessary except in the case of Tps 136 N Rs. 25 & 26 W. where the Mississ. River forms the Southern Bdy of the Tp and prevents the prescribed mode of subdividing being followed.

In these instances you will commence your survey by running a random line East from the corner of Secs 18 & 19 on the W. Boundary to the corner of 13 & 24 on the East Bdy. and correct the same back West setting your 1/4 and sec. posts at 40.0 & 80. chs. respectively. Then continue your survey running your line North and South from the center line commencing at the corner of sec. 13. 14. 23 & 24.

You are herewith furnished with diagrams of the Tps to be subdivided, showing the establishment of the section and meander corners & the fractional distances on the Tp boundaries & also the general topography as described in the notes of same.<sup>54</sup>

You will observe that the Western tier of sections in Tp. 136 N R 25 W. is less than 20 chs instead of 80 chs or thereabouts: this is occasioned by an error having been made in the survey of the 1st Stand. Par. and continued North of the 8th Stand; upon the establishment of which the 3 Guide Mer. North of the Mississippi river by this office the error was corrected.

You are furnished with blank field books in which to return your notes in the form and with the (word illegible) required in the “Manual” and you are also required to return with these all the original notes or memoranda actually taken by you in the field.

I would call your attention especially to the careful marking of your bearing trees, making the cuts deep & clear so that no difficulty may be found in establishing a corner after the loss of the post by rotting or otherwise. (U.S. Office of Surveyor General of Minnesota. Letters Sent vol. L 1862 245-246)

The two deputies completed their work in April, 1864 almost two years after they were awarded the contract. Clearly Wright was the “senior” in this partnership and a letter from Banker, dated September 22, 1862, asked that any United States draft for their work be assigned to Wright. (United States. Office of Surveyor General of Minnesota. Letters Received, vol. XLIX 1862 217)

The survey was interrupted by the hostilities of 1862, a fact that the Surveyor General noted in

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<sup>53</sup> In a circular dated March 20, 1860, the Commissioner directed that the contracts and special instructions should be made in quadruplicate rather than triplicate. The triplicate should go to the General Land Office and the quadruplicate should go to the First Controller of the Treasury.

<sup>54</sup> Diagram not seen

his annual report writing,

The contract assigned to Messrs. Wright and Banker was for the subdivisional surveys immediately north and west of the Gull Lake Chippewa reserve, but by the time their party were (sic) fully prepared, and had started for the field, there was some apprehension of trouble with the numerous bands of Chippewas; and when they reached within a few miles of Fort Ripley reports met them of the actual outbreak at Crow Wing. They reached the fort by a forced march most opportunely, as the troops then stationed there were so few in number that the addition of sixteen to their force was most welcome; ....

Messrs. Wright and Banker, with their assistants, were compelled to remain there for some time, and then returned to this place (St. Paul) and disbanded their party, it being useless to expect safely to prosecute their surveys .... In both these cases the contractors have, of course suffered great loss and damage while endeavoring to carry out the contracts assigned them; they claim that their losses should be made good to them.

In the case of Messrs. Wright & Banker I have been furnished by them with a detailed account, sustained by vouchers and affidavit, of the extent of their loss, which, at their request, I forwarded to the department with a letter expressing my belief of the correctness of the account ...

I have extended both of the foregoing contracts until, in my judgment, they may be safely carried forward ... (United States. Congress. House. 1862 83-84)

This interruption caused hardship to the partners, who led a surveying party of sixteen into the field, and they requested compensation for their financial losses along with an extension of their contract. Their requests prompted an exchange of letters between them, the Surveyor General, and the Commissioner of the General Land Office. On October 20 1862, the Surveyor General wrote to Wright and Banker telling them that the Department of the Interior would not consider their claims for damages warning them that, "a renewal or extension of your present contract can only be granted on the express understanding that all such claims are to be withdrawn" and stating,

Should you therefore be desirous of having the time for the execution of your surveys extended until the spring of 1863, you will please inform me in writing of your relinquishment of all claim for loss and damages made by you under your report and account of Sept. 6th 1862, and that no claim will hereafter be preferred on account of same. (United States. Office of Surveyor General of Minnesota. Letters Sent vol. L 1862 263)

As a result, on November 25, 1862, Wright wrote to Banker asking him to sign such a relinquishment and forward it to Washburn in St. Paul. In a note on the back of the letter is the comment, "Forwards relinquishment of his claim with G. B. Wright for any damage sustained by them while proceeding to execute their contract in consequence of Indian troubles." (United

States. Office of Surveyor General of Minnesota. Letters Received vol. XLIX 1862 242)

The contract did not progress without questions from Wright. On November 25, 1862 he complained,

I observe that the "General Instructions" give no direction in regard to planting of "closing" 1/4 Sec. corners on the standard parallels. They do not occur on any line run by the subdivision of the Tsp. south but a line previously run.

The Instructions direct the establishment of 1/4 Sec. Standard corners at the time of running the Std. Parallels and also of closing corners at the intersection of the lines run i.e. Sec. corners.

What is the law and ruling? (United States. Office of Surveyor General of Minnesota. Letters Received vol. XLIX 1862 237)

Washburn replied, on November 28,

Your note requesting information as to the establishment of 1/4 sec. Corners on the North boundary of a Tp. when such a boundary is a "Standard Parallel" & the 1/4 corners established thereon are consequently not applicable to the sections south of such Standards is received, and in reply I would state, that I am not aware of any land law or instructions of the General Land Office that requires the establishment of 1/4 sec. corners on Standard Parallels for the Northern tier of sections of the Tp. South of it.

There can of course be no closing 1/4 corner as the quarter lines are not run in the Government surveys. (United States. Office of Surveyor General of Minnesota. Letters Sent vol. L 1862 278)

A month later, on December 29, 1862 Wright, then in camp in section 27 T.136N R.26W, and the nearest post office at Crow Wing, wrote,

I find in surveying this tp that there is a small portion of T.135 R.26 between this and the River Mississippi, Shall I survey it? It will not be over 2 miles of line. Perhaps not over one. I wish to know further, whether I can have my work examined speedily so as to get my pay without delay for what I survey this winter - say for a couple of tps. (United States. Office of Surveyor General of Minnesota. Letters Received vol. XLIX 1862 240)

The Surveyor General replied, on January 20, 1863,

In reply to your letter of the 29th ult. respecting a small frac. Tp on the Mississippi River not embraced in your present contract being Tp 135 N R 26 W 5th P Mer. I have to say that insomuch as this frac. Tp would have been included in your contract had I been aware that such a Town was there situated, (the Township lines on file not

showing it) you are hereby instructed to make a survey thereof with the exterior boundaries of same returning the notes and diagrams in the same form required for the surveys under your contract. All the surveys now being executed by you will be platted and passed upon by this office immediately on the return of the notes, and if approved, accounts for the same will be transmitted to Washington for payment under the terms of your contract. (United States. Office of Surveyor General of Minnesota. Letters Sent vol. L 1862 284)

A few months later Washburn responded to a letter sent by Wright on April 20 (not found) asking how he should correct the western boundary of T.136N R.26 W.

I have now to state that as your examination of the above boundary made subsequent to your completion of the subdivision of T 136 N R 36 W shows conclusively that there exists an error of 10 chs in the whole line but which error was no doubt made in obtaining the distance by offset from the South Bdy of T 136 N R 26 & 27 W at its intersection with the Mississippi river and not as first supposed by you at the north end of said Bdy it will be necessary for you to remeasure the whole line by commencing at the corner of Secs. 34 & 35 on S Bdy of Tp 136 N R 27 W then running north two miles then East 2 miles to the range line and establish corner to Secs 24 25 91 & 30. Then remeasuring said Range line South of the Mississippi river and North to the 9th Standard Parallel - Establish the proper Section, 1/4 section and meander corners thereon and carefully erase and destroy the erroneous corners previously established - You will return separate notes of the remeasurement of this line. You will proceed to the correction of the lines in Tp 136 N R 26 W between Sec. 30 & 31 - 19 & 30 - 18 & 19 - 7 & 18 and 6 & 7 by running same from the interior section corners West of the new corners established by you on the Range line making the necessary corrections in your subdivision and meander notes and being careful to obliterate the marks of the 1/4 section and meander corners previously established on those lines. Your compensation for the remeasurement of the Range line will be at the same rate as your subdivision surveys - viz. \$5 per mile but in consideration of the circumstances and the instructions under which the subdivisions were made and your inability to detect the error subsequently found to exist in the Range line until you arrived at the intersection of the North Bdy of the Township with the further difficulty of not having the distance on the West side of Sec 6 by which you could have ascertained the discrepancy between your line and the Township Bdy before reaching the western side of the Township I shall include in your account of these subdivisions the remeasuring of the lines of the western tier of Sections and also urge upon the Department the justice of your being paid thereof.

I would however remark that in ascertaining the proper place for corners of Secs. 24-25-19 & 30 on the Range line in accordance with the foregoing instructions there is little or no additional work required as such lines form part of the subdivision of Tp 136N R.27W embraced in your contract.

The variation of the west side of Sec. 6 (T 136 N R 26 W) is returned at  $110^{\circ} 45'$  the length of line 80.10 chs found by the Deputy by offsetting from the meander corner

established at 43.70 chs North from corner of Secs 1-6 7 & 12 West 22 chs then North 36.40 chs to the 9th Standard Parallel no distance being given from such intersection to any post on the Parallel, the true corner being in Lake.

I would call your attention to the following as a general guide in future in all subdivisional surveys. The duty of a deputy in finding a discrepancy between his own work and the Township line survey is first to re-trace and thoroughly re-examine his own work then if no error is found to examine the Township line and if an error is there found to exist after a careful retracing and remeasurement of the line, such Township line may be resurveyed provided that the adjoining Townships has not been previously subdivided and that no change would thereby be necessarily required in a Township corner. (United States Office of Surveyor General of Minnesota. Letters Sent vol. L 1862 315-316)

Apparently the partners were paid in at least two installments. On June 24, 1863 the Commissioner of the General Land Office forwarded a draft for \$441.42 to Washburn for the surveys Wright and Banker had completed. (United States. Office of Surveyor General of Minnesota. Letters Received vol. L 1863 107) The amount exceeded what either deputy expected. The Commissioner stated the difference was due to, "our allowing the deputies for the survey of the lines connecting the closing with the standard corners, in Tps 135 & 136 N. R 26 W, amounting to 1m. 01 ch. 41 l.; as authorized by the Manual of S. Instructions pp 22 & 25."

On September 30 Washburn wrote to Wright acknowledging that he had received the field notes for T.133N R.31 and 32W and added,

I have purchased the markers as you request and will have them delivered to Mr. Morse to be forwarded.

As the contracts of Messrs. Johnston and Thornton and Mr. Cook will cover the sum apportioned for field work for the present fiscal year, I shall be unable to assign you any further surveys this season. I shall however be glad to receive any information you may obtain as to any Townships adjoining those embraced in your contract that might be desirable to subdivide in 1864 as containing valuable timber. (United States. Office of Surveyor General of Minnesota. Letters Sent vol. L 1863 374)

In his annual report September 10, 1863 the Surveyor General noted that the only progress under the "very limited appropriations made for carrying the forward the public surveys for the fiscal year ending June 30, 1863" was the subdivision of two fractional townships on the Mississippi River by Wright and Banker "which have been approved and the plats transmitted," writing,

Mr. Wright returned to the field several weeks since, and is prosecuting his work with vigor, the notes of one township having been received, which are now being examined and platted. I have no doubt the whole contract will be completed by the end of the season. (United States. Congress. House 1863 64)

The following year, in his annual report dated October 10, 1864 Washburn noted that Wright and

Banker had completed their work. He had approved their field notes, the plats had been sent to Washington and the plats and descriptive lists had been forwarded to the land office at St. Cloud. (United States. Congress. House 1864 137) They were not paid for their surveys promptly. On January 23, 1864 Commissioner Edmunds wrote giving his reasons for withholding payment,

Mr. Wright who executed the fieldwork with the assistance of two compassmen and twelve chainmen & axemen averaged twenty miles per day in perambulating the requisite distance in surveying, running and marking the lines and returning from the n. tier of sections to the south boundaries of the townships surveyed. This progress could not have been made by one party superintended by the Deputy, the surveys progressing in different townships on the same identical days, thereby precluding Mr. Wright from truly swearing to his field notes that the work was performed in strict conformity to the law & instructions as well as his contract which requires him & his joint partner to execute their surveys in their proper persons.

The transcript of the field notes show that Mr. Wright surveyed on the 28<sup>th</sup> day of Sept. last 54 miles; Oct. 2<sup>d</sup> 32 miles, on the 5<sup>th</sup> & 6<sup>th</sup> 21 miles each, on the 8<sup>th</sup> 25 miles, & on the two last days of work 78 miles. (United States. Office of Surveyor General of Minnesota. Letters Received vol. LI 1864 9)

In addition he noted that the surveys had only meandered one bank of the Long Prairie River.

On February 11, 1864 the Surveyor General wrote a lengthy reply

Referring to the first point of objection raised in your communication, to wit, that Messrs Wright and Banker with one party could not possibly have run the lines shown by their notes to have been established each day during the time they were in the field & c. I have to say that during all or nearly all the time said surveys were progressing they employed in prosecuting the same three separate parties directed and superintended by Mr. Wright in his own proper person.

Under your construction I hardly see how the Deputy could truly subscribe to the Oath without individually performing the entire work in detail. The fact that the compassman and other assistants employed in accordance with the instructions, in the execution of their work are required by the Department to make oath attached to the original field notes on file in this office, that they faithfully performed the work assigned them in accordance with the instructions & c., implies at least that the Department as well as the Deputies rely somewhat upon their affidavits in establishing the fact that the surveys were faithfully executed; and I apprehend if those affidavits were omitted the work would not be approved even though the Deputy should swear that the work was performed in accordance with the law and regulations, and having employed at the same time but one party and that under his constant supervision.

As I understand it the Deputies while having the general direction and supervision of the Surveys in the field, giving to the same their undivided attention and being responsible if the work is not properly done, must of necessity rely to a large extent



upon the honesty of their assistants for the faithful performance of the details of the work; and their affidavits under such circumstances if the notes show and the Deputy knows nothing to the contrary may properly be regarded by him as conclusion that the work has been so performed and have heretofore apparently been regarded by the Department. Whatever may be the construction of the Department now however, Messr Wright and Banker proceeded to execute the surveys under their contract in the manner in which the same was done so far as relates to the employment of different parties, with the knowledge and approval of this Office; and in justification of myself I have to say that it is consistent with all former practice of the office since its removal to this state and while in Michigan, of the office at Dubuque and I presume of the other offices in the country. Such having been the unquestioned practice for years I had reason to believe that it was sanctioned by the Department and that its continuance would not be disapproved.

For explanation of the manner in which Mr. Wright prosecuted the surveys with different parties, the average amount of actual lines established each day, the facility with which he was able to superintend the work & c. I refer you to the enclosed copy of a communication from him.<sup>55</sup> I would especially call your attention to the statement of the average amount and the greatest amount run in one day and to his explanation of the fact that he could superintend the work of two or more parties operating in different towns at the same time. I would further say upon examination of the original notes on file in this office it appears that he ran on the 28th day of September last 8 miles, including randoms, on the 2d day of October 18 miles, on the 5th 11 miles, on the 6th 21 miles, on the 8th 24 miles, a portion of which Mr. Wright says should be credited to the 9th, and on the two last days of his work 47 miles, a portion of which he says properly belongs to the 12th of Oct.

Owing to a slight but perhaps unavoidable confusion of dates as explained by him some days have more work credited them than was actually done on those days. If then your examination of the transcripts is correct some of the dates in the original notes on file in this office must have been left out of the transcripts.

With respect to the omission of the meanders of the left bank of the "Long Prairie" river in Messrs Wright and Bankers and also the omission of the left bank of "Kettle" river in Mr. Cooks notes, I would observe that I found it had been the practice of this office both beforehand since its removal from Detroit, to instruct Deputies to meander one bank only of rivers not strictly navigable streams but used for rafting and of great importance in sections where lumbering operations would always be carried on; although meander posts were always required to be set on both banks on every section line. The instructions to meander but one bank were based I believe upon the ascertained fact that Deputies had been in the habit of taking the courses and distances of one bank only of such small streams (they being generally of a uniform width) and constructing a set of meanders for the opposite shore and returning them in their notes as if both had been actually run, and thus obtaining pay for work not really

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<sup>55</sup> Letter not seen

performed. As the object of the meander notes was only to obtain the data on which to ascertain the area of the lots made fractional by the river it was justly I think, considered unnecessary to pay a deputy for running useless lines or pretending to run them, when they could just as well be protracted in the office.

In both the contracts of Messrs Wright and Banker and Mr. Cook as also in that of Messrs Johnson & Thornton I knew that certain important streams for lumbering purposes passed through a portion of their subdivisional surveys and I so fully coincided with the views taken by my predecessor of the importance of keeping such open and unobstructed although could certainly not be termed navigable streams in the usual acceptance of the term, that I had no hesitation in directing their meander in the same manner that other streams of like character had been previously meandered both in this State and Michigan, and against which mode no objection had been heretofore made by the Department. The Deputies are usually instructed to take the courses and distances upon the same bank of the stream through the township but where obstructions or difficulties might be met with on that bank I could see no reasonable objection to their changing to the opposite bank, the course of the river being just as clearly ascertained and the necessary protraction made in the office. (United States. Office of Surveyor General of Minnesota. Letters Sent vol. K 1864 386-390)

On March 5, 1864 the Commissioner returned Wright and Banker's account for Wright's affidavit, presumably to address some of the concerns he expressed in his previous letter, stating that the account would be reported to the Department of the Treasury for payment as soon as it was received. (United States. Office of Surveyor General of Minnesota. Letters Received vol. LI 1864 15)

#### **4.5 George A. Ralph (Squires, 2012a 15 footnote 7; Figs. 4.6 – 4.18)**

George A. Ralph carried out numerous surveys for the federal government in northwestern Minnesota from 1894 to 1910. Here, I describe one of his less successful contracts.

[4-000.]

## CONTRACT AND BOND.

No. 72

Office of U. S. Surveyor General.

St Paul, Minnesota

November 6, 1896

P. H. Kirwan  
U. S. Surveyor General.

George A. Ralph  
U. S. Deputy Surveyor.

\$ 2350.

Payable from the Appropriation of  
\$50,000 - per Act of June 10, 1896  
for surveys in the Cripple  
Indian Reservation in Minnesota.

Approved November 21, 1896.

Commissioner of the General Land Office.

Recorded in Contract Book No. \_\_\_\_\_, page \_\_\_\_\_

(587-9,000)

Figure 4.6 George A. Ralph contract and bond November 6, 1896.  
(Image from MHS collection. United States Office of Surveyor General of Minnesota, 2012c)

On November 6, 1896, Patrick H. Kirwan, the Surveyor General of Minnesota awarded George A Ralph, then in Crookston, contract No. 72 (Fig. 4.6 ) to “survey, mark, and establish” the subdivision and meander lines in T.157-161N R.31W.<sup>56</sup> The contract also stated that he would subdivide all sections in the townships containing pine timber into 40 acre tracts. He was to be paid \$9 per mile for standard and meander lines, \$7 per mile for township lines, and \$5 per mile

<sup>56</sup> When the practice of numbering the contracts started is not known.

for “Section and Connecting lines, except where the lines of survey pass over mountainous lands, or lands heavily timbered, or covered with dense undergrowth” in which case the rates per mile would be \$13, \$11, and \$7 respectively. The estimated liability of the government, i.e. the estimated cost of the work, was \$2,350. Edmund M. Walsh and Jerome W. Wheeler, both of whom lived in Crookston and possessed real estate valued at \$2,400, became the sureties for the survey work. Ralph was to finish his work before April 1, 1897. On the same day Kirwan issued the deputy special instructions (Fig. 4.7) and on November 13 forwarded copies of both the contract and the special instructions to, S. W. Lamoreux, Commissioner of the General Land Office, writing,

I have the honor to transmit herewith for your approval, contracts and bond, in duplicate, .... No. 72 dated Nov. 6, 1896 with Geo A. Ralph D.S. estimated liability \$2,350 with special instructions accompanying each contract, comprising surveys in the Red Lake Indian Reservation authorized by your letter “E” dated September 2, 1896.<sup>57</sup> (United States. Office of Surveyor General of Minnesota. Letters Sent Letterbook vol.10 1896 53)

Kirwan received a reply from the Commissioner dated November 21. (Fig. 4.8)

Ralph began his work November 29, 1896 first subdividing T.157N R.31W which he finished on December 11. He then took a break, resuming his work April 16, 1897, subdividing T.158N R.31W and T.159N R.31 during the next three weeks. His notes for this work are transcribed in volume 416 and were certified by Surveyor General Kirwan on September 25, 1897. (Bureau of Land Management, General Land Office Records, 2012) It is not clear what he did next. Presumably, he subdivided T.160N R.31W, work that was eventually rejected, finishing his contract by subdividing T.161N R.31W between November 24 and the following May. His notes for the T.161N R.31W were certified by Kirwan on August 10, 1897. (Bureau of Land Management, General Land Office Records, 2012). In his annual report, dated July 10, 1899, Surveyor General Warner noted that Ralph had returned his field notes. (United States. Congress. House 1899)

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<sup>57</sup> Letter from Commissioner not seen.

OFFICE OF THE U.S. SURVEYOR GENERAL,  
SAINT PAUL, MINN., NOV. 6, 1896.

George A. Ralph, Deputy Surveyor,  
Crookston, Minnesota.

Sir:-

In addition to printed instructions contained in Manual of Instructions to Surveyors General dated June 30, 1894 furnished you, the following special instructions are issued for your guidance in the execution of surveys under your contract No. 72 of this date.

You will carefully observe every detail specified in said Manual, and if for sufficient cause an instruction cannot be complied with in any stated case, that cause should always be stated in the field notes in its proper connection. In absence of this precaution on your part any inference in your favor cannot be entertained at this office when examining your returns.

Herewith you are furnished diagrams of the exterior lines of the township to be subdivided by you showing the topography and the courses and measurements of the same according to the field notes of the survey thereof on file in this office.

If the exterior lines of the township<sup>5</sup> are found defective as defined on page 72 of the Manual, you will make necessary corrections after carefully considering the rules laid down on pages ~~70, and 72~~ <sup>71, 72, 73, & 74</sup> of the Manual, and especially the restrictions on page 234.

The subdivision lines having been closed upon the South boundary of Tp. 157, N., R. 31, W., and the West boundary of Tp. 180, N., R. 31, W., no changes can be made in the alignment or position of said lines; but errors in measurement may be corrected and new corners set for your subdivisions in accordance with paragraph 2 on page 73 of the Manual.

In the subdivision into 40 acre tracts of the sections which contain pine timber in addition to the corners required by the Manual, additional corners called quarter-quarter corners must be established at points on the township and section lines equi-distant between the section and quarter section corners except on the half mile closing on

Figure 4.7 Special instructions George A. Ralph November 6, 1896.



(2)

the North and West boundaries of a township when they will be placed at 30 chains North or West as the case may be of the quarter section corner.

The subdivision of the sections into 40 acre tracts or quarter-quarter sections, requires the running and measuring of three additional lines within each section in the same manner as East and West section lines are run, that is by random and true lines.

Annexed is a diagram of one section illustrative of the manner in which you are to subdivide the sections of pine timber. The lines and corners designated upon the diagram in black represent the lines and corners required to be established in the regular survey of the public lands and each corner will be marked in the manner required in the Manual. The continuous lines and corners indicated in the diagram in red represent additional lines and corners which you are to establish and mark. The dotted lines are mere protractions on the plat and are not to be surveyed. The quarter-quarter corners to be established on the township and section lines, and on lines subdividing sections will conform to the description given in the Manual for quarter section corners with the single exception of marking all but the one falling in the center of the section with the designation of  $1/16$  instead of  $1/4$ . The corner at the center of the section being common to four quarter sections will be marked as a  $\frac{1}{4}$  section corner.

The subdivisions must be made with a solar compass or instrument working independently of the magnetic needle.

Your attention is called to instructions on pages 19, and 20 of the Manual in reference to the examination and testing of your instrument and the record required to be kept of the same. For record of tests required see specimen field notes, particularly pages 188, and 217. Your attention is also called to the requirement on page 20 of the Manual that your chain must be compared and adjusted with your field standard on each working day and you will record in your field notes the fact that such comparison and adjustment was made.

All surveys should be executed in the first instance as to bear a critical test in the field, and the utmost care should be taken

Figure 4.7 cont. Special instructions George A. Ralph November 6, 1896.

(3)

in the preparation of the field notes prior to submitting the same. The perfection of the original field notes prior to filing them in the Surveyor's Office is of great importance and will be important in the future. The notes must be filed after they have been so filed.

The description of the surface.

In order that accounts for high rates may be properly adjusted your field notes must show the exact chainage at which you enter and leave land "heavily timbered, mountainous, or covered with dense undergrowth", and in your description at the end of each mile run you must state the exact distance in chains and links which is of such character.

The increased compensation cannot be allowed, however, unless both plats and field notes conclusively show the character of the country to be such as shall admit of high rates; otherwise only the minimum rates will be allowed.

The plat must show graphically a complete correspondence with the description contained in the notes. The notes must show from point to point on the line the exact character of the country, while there and

in the general description at the end of the line run the exact wording of the Appropriation Act should be used as "heavily timbered, mountainous", or "through dense undergrowth". Each note relative to entering and leaving such land should appear in separate lines so as to be distinct from other entries.

You will note all improvements of settlers found by you in the execution of your surveys and state the location and approximate value of said improvements.

You are required to execute in your own proper person the surveys provided in your contract, and the employment of a compassman will not be allowed except in case of positive disability to complete your work; and in such case all the facts must first be reported to this office and authority obtained from the Commissioner of the General Land Office for the employment of a compassman to complete the work.

As the estimated liability of a contract must not be exceeded unless specially authorized by the Commissioner of the General Land

Figure 4.7 cont. Special instructions George A. Ralph November 6, 1896.



(4)

Office, you are hereby instructed that whenever the limit of your contract is approached and it is found that the completion of the survey will carry the cost beyond the estimated liability thereof, viz: <sup>1250.</sup> ~~2350.~~ you must make due application to this office for authority to complete the survey, stating the approximate cost and excess of liability. Your application must be in writing, and you must render with the application a statement of the number of miles run, and the probable amount unfinished in order that this office may have the data to verify your estimate of the approximate cost and liability.

An extension of time in which to complete surveys and make returns of the same will in the future be allowed only for good cause, and for delays wholly beyond the control of the deputies. All applications for extensions of time under a contract must state specifically under oath the causes which prevent the completion of the survey and return of the field notes prior to the expiration of the contract period; and said application must be submitted by you to this office in time for the Commissioner of the General Land Office to consider the same before the contract expires.

On the diagram returned with your field notes you will, as far as practicable, from careful observation, give the outline of all uncultivable swamps and marshes in order that the rights of the State to the swamp lands may be properly adjusted.


  
Surveyor General.

Figure 4.7 cont. Special instructions to George A. Ralph November 6, 1896. (Image from MHS collection. United States. Office of Surveyor General of Minnesota, 2012c)



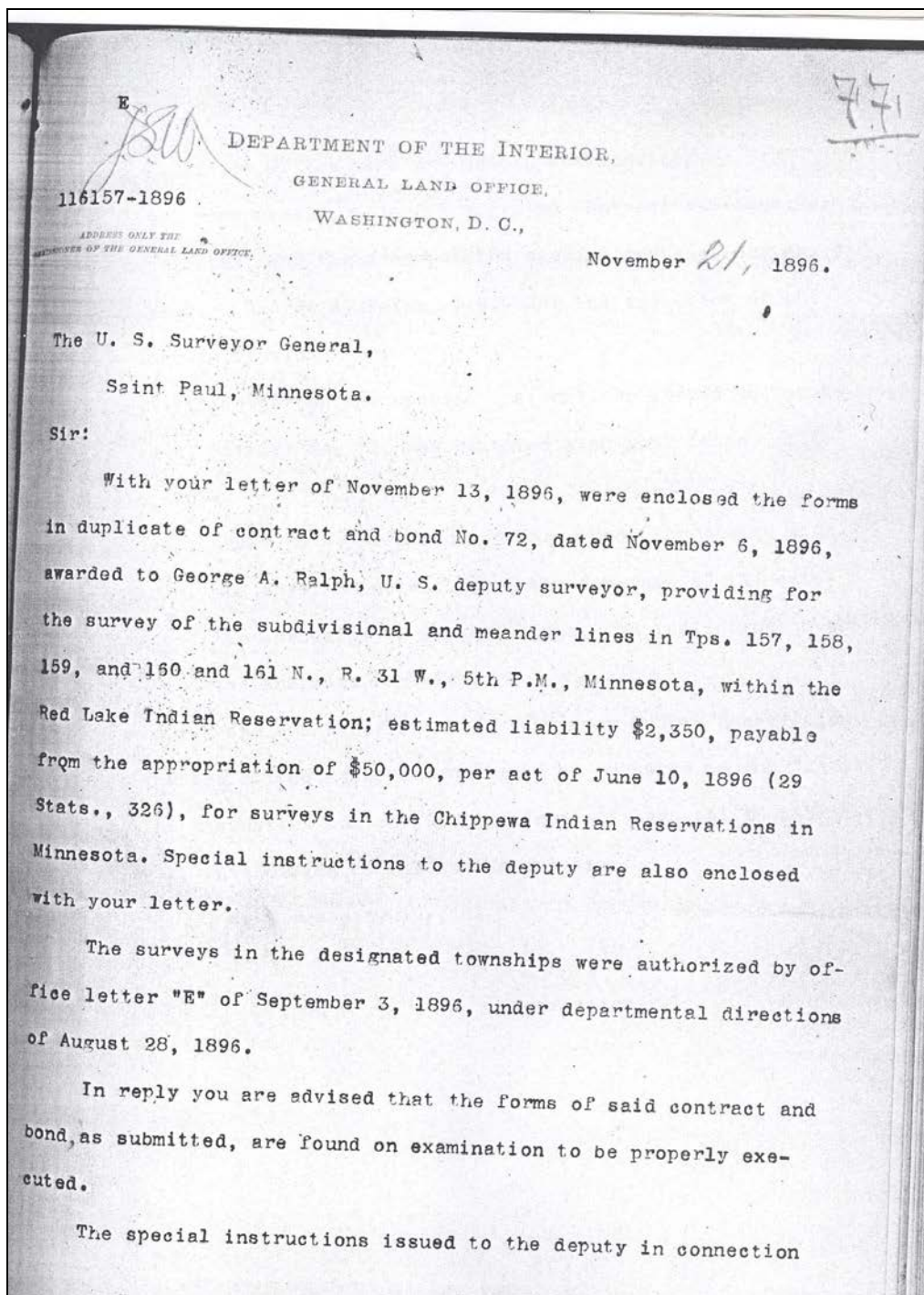


Figure 4.8 Commissioner's approval of Contract, Bond, and Special Instructions.

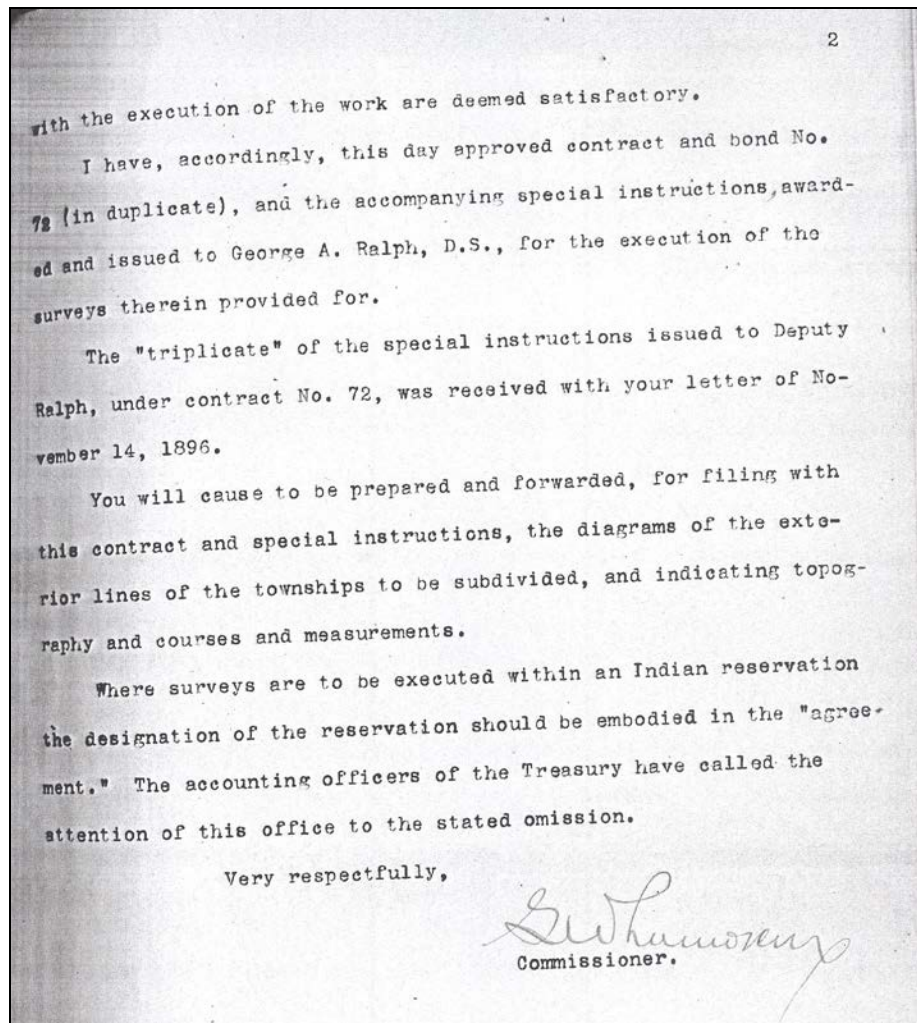


Figure 4.8 cont. Commissioner's approval of contract, bond, and special instructions. (Images from MHS collection. United States. Surveyor General of Minnesota, Letters Received vol. LXXXIII 1896) <sup>58</sup>

Sometime in early March 1897 Ralph requested more time to finish his contract. (letter not seen) At the time he had not completed his work in T.161N R.31W. (Fig. 4.9) In an affidavit accompanying his application for an extension, dated March 17, he stated,

(O)n the 24<sup>th</sup> day of November, 1896, I began work in township 160 and 161 North, Range 31 West, under my contract No.72 dated November 6<sup>th</sup>, 1896, and approved November 21<sup>st</sup>, 1896, that after working in said townships for the period of about ten days, owing to an unusual and violent snow-storm, for that season of the year, the snow reached a depth of nearly three feet where I was working, on account of there being no frost in the ground and considerable water on the swamp lands, this unusual fall of snow made it impossible for me to proceed with the work under my contract at

<sup>58</sup> The departmental directive mentioned in the second paragraph of the letter can be seen in the same volume

that time, or to do it in a satisfactory manner; that the month of December is the month in which we usually get the greatest part of our snow, and that taking this into consideration, I concluded to abandon the work at that time and to wait such time as the snow might become settled and suitable for snow-shoeing. That during the month of January I again went into the field and undertook to do the work on snow-shoes; that at that time the snow had reached a depth of about four feet, and I found it impracticable to use snow-shoes or to do the work in a satisfactory manner. I therefore concluded to return from the field and wait until such time as the snow would become settled or thawed to such an extent as to allow the execution of the work without the use of snow-shoes. At this date the snow is still over four feet deep on the land embraced in this contract. I find that it will be impossible for me to complete the contract under the most favorable conditions of weather within the time specified in said contract. I would therefore urgently request that the extension .... (United States Office of Surveyor General of Minnesota, Letters Received vol. LXXXIX 1897)

On March 19 1897 Kirwan forwarded Ralph's application, with his approval and also the consent of Ralph's sureties, to the Commissioner,

Herewith I have the honor to enclose for your consideration an application, of Geo A. Ralph D.S. for an extension of time in which to complete the surveys required under contract No. 72 dated Nov. 6, 1896 & due for completion on or before April 1, 1897. Said time is extended to June 15, 1897 this office being satisfied that the weather conditions prevented a compliance with the requirements of the original contract. (United States. Office of Surveyor General of Minnesota, Letters Sent vol.10 197)

Commissioner Lamoreux responded March 25, 1897 extending the contract to June 15. (Fig 4.10) On March 31 Kirwan apprised Ralph of the Commissioner's reply to the application ending with a question, "When do you expect to go out." (United States. Office of Surveyor General of Minnesota, Letters Sent vol.10 212) There is no further correspondence about this contract although clearly the field notes of four townships were accepted and township plats certified. (Fig. 4.9)

<b>Field Notes Vol.</b>	<b>Township</b>	<b>Date Surveyed</b>	<b>Date Field Notes Certified</b>	<b>Date Township Plat Certified</b>
416	T.157N R.31W	Nov. 29,1896 – Dec 11, 1897	Sept. 25,1897	Jan. 25,1898
416	T.158N R.31W	April 16-27,1897	Oct. 25,1897	Jan. 25,1898
416	T.159N R.31W	April 30 –May 9, 1897	Nov. 1,1897	Jan. 25,1898
417	T.161N R.31W	Nov. 24,1896-May 3,1897	Aug. 10,1897	Jan. 25, 1898

Figure 4.9 Ralph field notebook volumes under contract November 6, 1896.

This was not to be the end of Ralph's contract, however, because his field notes for T.160N R.31W were rejected. On August 1, 1902 Warner wrote to Ralph,

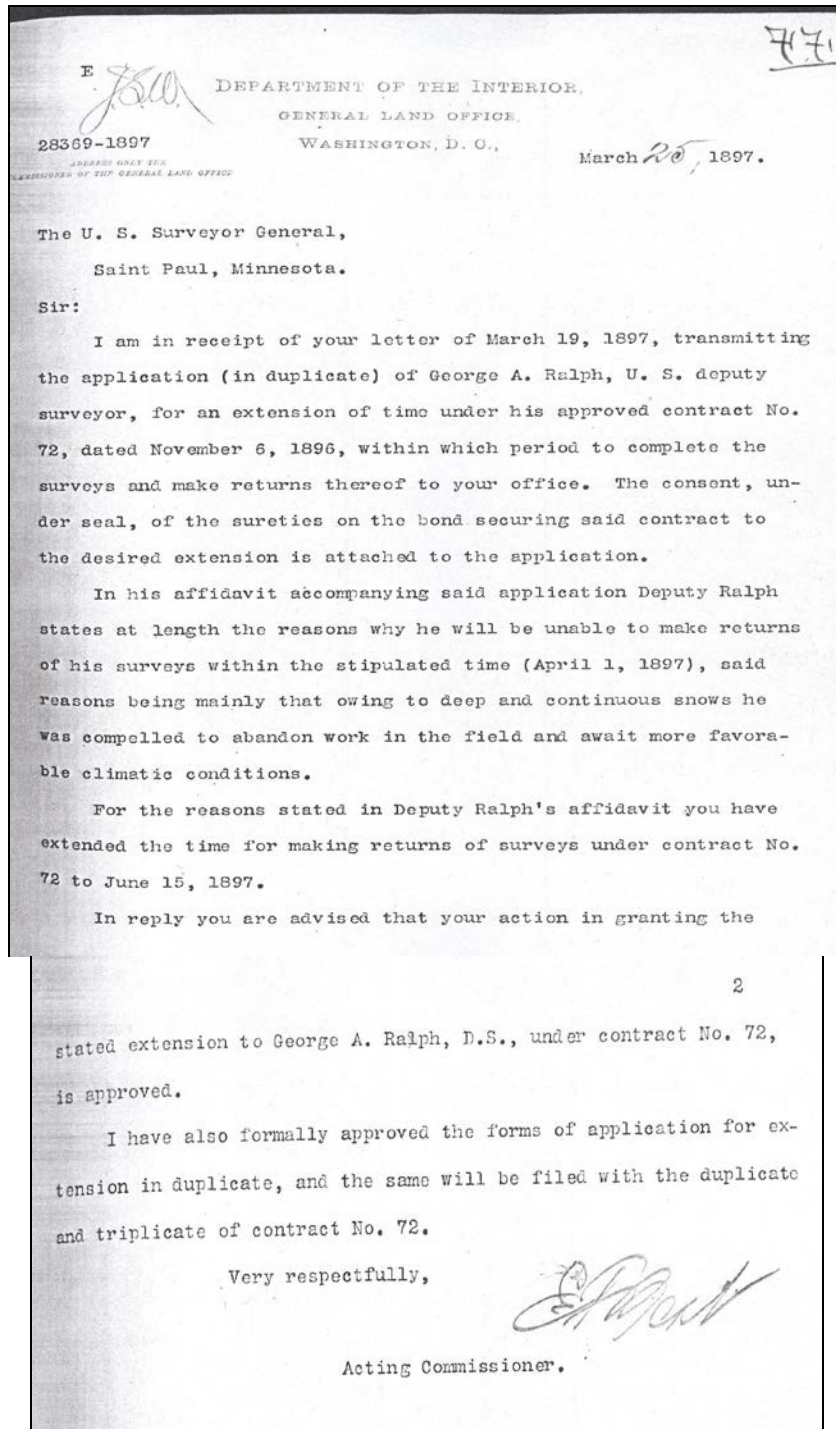


Figure 4.10 Commissioner's approval of George A. Ralph's request for extension. (Image from MHS collection. United States. Surveyor General of Minnesota, Letters Received vol. LXXXIX 1897)<sup>59</sup>

<sup>59</sup> The approval for an extension was also noted faintly in pencil on the cover of the contract, see Figure 4.6.

I enclose herewith, a copy of a letter from the Com. Of the General Land Office, dated July 25, 1902 rejecting, for obvious reasons set forth in said letter, your survey of T.159N R.31W 5<sup>th</sup> P.M. Minnesota, and requiring the sureties on your bond to appoint a compassman, to execute the survey of said township.<sup>60</sup>

I also enclose a letter addressed to your bondsmen, requiring them to appoint a compassman, together with a paper in duplicate to be signed by them, appointing a compassman and agreeing to assume the same obligation for the compassman, which they assumed for you. Please hand the letter to the bondsmen, and have them name a compassman, and sign the enclosed paper and return them to this office.

The appointment of compassman must be accompanied with testimonials, as to his qualifications to make the survey, as to his experience in public land surveying & the use of the Solar Compass & c.

Please attend to this without delay. Acknowledge receipt. (United States. Surveyor General of Minnesota, Letters Sent vol. 14 223)<sup>61</sup>

The same day Warner also wrote to Ralph's sureties informing them that the Commissioner had rejected Ralph's survey of T.159N R.31W and directing them to appoint a compassman to execute the survey,<sup>62</sup> writing,

I have prepared, in duplicate, and enclose herewith, a paper for you to sign, appointing the compassman and agreeing to assume for the work of the compassman, the same obligation which you assumed for Mr. Ralph. The Compassman must be a careful competent surveyor, who has had experience in public land surveying, and the use of the Solar Compass etc., and testimonial as to his qualifications and experience must be furnished this office. (United States. Surveyor General of Minnesota, Letters Sent vol. 14 222)

Two weeks later, Ralph, at the request of his sureties wrote to Warner asking that Charles H. Armstrong, who worked as a deputy in northern Minnesota 1893-1907 and had previously been employed as compassman to survey T.159N R.41W, be appointed to carry out the survey. (United States. Surveyor General of Minnesota, Letters Received vol. CV 1902) On August 14 Ralph's sureties wrote to Warner,

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<sup>60</sup> The letter from the Commissioner has not been seen. I believe the location of the township is in error, the real township is T.160N R.31W. The notes for T.159N R.31W had already been certified, see Figure 4.9.

<sup>61</sup> There seems to be no evidence to suggest why the survey was rejected nor does there seem to be any reason why this occurred several years after Ralph's survey of the other townships described in the contract were accepted.

<sup>62</sup> The actual duties of a compassman are unknown.



(W)e do hereby, each of use, assume the same obligation for the work of said

compassman, as we assumed for the said George A. Ralph, the principal on said bond.  
(United States. Surveyor General of Minnesota, Letters Received vol. CV 1902)

On August 19 Warner replied to a letter Armstrong had written him two day earlier accepting his appointment as compassman “to completed and correct” the survey in T.160N R.31W.<sup>63</sup> The Surveyor General wrote that special instructions were being prepared and would be sent to the Commissioner for his approval. Stating that the government did not get involved in paying him he urged Armstrong to arrange his compensation and expenses with the principal and his bondsmen, he wrote,

I presume they will agree to the same arrangement in this case, as they have with you for T.159N R.41W. I think this Township (160-31) is easily accessible, as the Railroad running East from Warroad, crosses the Rainy Lake River only about two or three miles North of the Township.

I send you duplicate official Oaths, which please swear to and return at once. (United States. Surveyor General of Minnesota, Letters Sent vol.14 257)

Two day later Armstrong swore the necessary oath, (Fig. 4.11) and Warner issued him a contract and special instructions.<sup>64</sup> (Fig. 4.12)

With the special instructions the Surveyor General sent Armstrong several other items; a copy of the township plat based upon Ralph’s notes, the descriptive notes based on Ralph’s field notes, and a letter from the Commissioner stating some of the errors found in the surveys, all of which suggested “no part of the subdivision of the township can be relied upon as correct.” In the letter Warner made clear that the adjoining townships had already been surveyed and so the township lines should be minimally altered. The instructions were sent to the Commissioner on August 23 (United States. Surveyor General of Minnesota, Letters Sent vol.14 266) who approved them September 15, 1902, according to the information on the front of the contract. (Fig.4.12 ) On the same day the Surveyor General wrote to Edwin H. Van Antwerp, the Examiner of Surveys, then in Roseau, “Mr. Armstrong as Compassman for George A. Ralph is also to resurvey in October or November T.160 N., R.31 W., the survey of which has been condemned.” (United States. Surveyor General of Minnesota, Letters Sent vol. 14)

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<sup>63</sup> Letter not seen.

<sup>64</sup> The contract for Armstrong is not present in the MHS collections.

## OATH.

I, Charles H. Armstrong

do solemnly swear that I will support and defend the Constitution of the United States against all enemies, foreign and domestic; that I will bear true faith and allegiance to the same; that I take this obligation freely, without any mental reservation or purpose or evasion; and that I will well and faithfully discharge the duties of the office on which I am about to enter: So help me God.

Charles H. ArmstrongSworn to and subscribed before me this 21<sup>st</sup>day of August, A. D. 1902W. H. McLean

Notary Public.

Mower Co

Figure 4.11 The oath of Charles H. Armstrong.

(Image from MHS collection. United States. Office of Surveyor General of Minnesota, 2012c)

Surveyor General's Office,  
St. Paul, Minnesota,  
August 21, 1902.

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Special Instructions to  
Charles H. Armstrong, as  
Compassman to correct and  
complete surveys in T.160 N., R.  
31 W., executed by Geo. A. Ralph,  
D.S., under Contract No. 72  
dated Nov. 6, 1896.

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*Approved. Sept. 15. 1902*

Figure 4.12 Special instruction of Charles H. Armstrong August 21, 1902.



Surveyor General's Office,  
St. Paul, Minn., August 21 1902.

Charles H. Armstrong, D.S.,  
Stewartville, Minnesota.

Sir:-

Reposing special confidence in your integrity and ability, and by authority of the Commissioner of the General Land Office, I hereby, appoint you as Compassman to correct and complete the surveys in T. 160 N., R. 31 W., 5th P.M. Minnesota, executed by George A. Ralph deputy surveyor, under his contract No. 72 dated November 6, 1896.

You are furnished herewith, a copy of the plat of T. 160 N., R. 31 W., made in accordance with the surveys reported by Mr. Ralph as having been made by him, together with descriptive notes of all corners on the exterior boundaries of the township, and corners reported by Mr. Ralph as having been established in the subdivision of the township.

You are also furnished a copy of a letter from the Commissioner of the General Land Office, dated July 25, 1902, giving a statement of some of the errors, found in the surveys of Mr. Ralph as reported by Carl R. Caudle, Examiner of Surveys.

The numerous errors in the courses of the lines, reported by the examiner indicates that errors equally serious exist in other parts of the township, and that no part of the subdivision of the township can be relied upon as correct.

You are therefore, instructed to make all necessary examinations of the subdivision lines run, to determine existing errors, and to make such corrections of the surveys as will make them fully conform with the requirements of the Manual.

If in closing the subdivision lines upon the exterior boundaries of the township, you find that your work does not close within the limits prescribed in the Manual, and having made satisfactory examinations to prove your own work correct, you will retrace such of the townships lines as may be necessary to determine where the error exists. As the townships adjoining T. 160 N., R. 31 W., have all been subdivided, and the surveys

Figure 4.12 cont. Special instructions of Charles H Armstrong August 21, 1902.

(2)

accepted, no change can be made in said township lines, except that errors in measurement may be corrected by establishing corners common to two sections in T.180 N., R.31 W., at intervals of 80 chains: (also 1/4 Sec. corners at intervals of 40 chains) in direct line between adjacent old corners and altering the markings of said corners that they may have reference to two sections only.

All lines of corrections must be run from corners known to be in correct position and in running said lines, you will be governed by instructions given in the Manual for the subdivision of the township into sections.

You will note in your field notes, the relative position of all erroneous corners found by you in the progress of your examinations and corrections; and also note the fact that you destroyed all traces of such erroneous corners.

Your examinations must be made with a Solar compass, or instrument working independently of the Magnetic needle, and you will observe all of the requirements of the Manual, relating to observations of polaris, taking the latitude daily, the testing of your chain and the record to be made of the same.

You will keep full and complete field notes of all examinations and corrections made, noting the topography, and describing the character of the land, timber &c., as for an original survey.

When a corner is found in correct position you will fully describe the marks on the post and bearing trees, and note the true course and distance from the corner post to the bearing trees. If the corner post or bearing trees are incorrectly marked, you will make the necessary corrections. If the corner is established by mound and pits, you will record the size, dimensions and location of the same.

It is hereby stipulated, that the said Chas. H. Armstrong, in accepting the appointment of compassman, for the purpose herein stated, expressly agrees to waive all claims against the United States for his services as compassman for George A. Ralph Deputy Surveyor, under his contract No. 75, and that he will

Figure 4.12 cont. Special instructions of Charles H. Armstrong August 21, 1902.





FIELD NOTES  
~~OF THE SURVEY OF THE~~  
*Explor*  
~~SUBDIVISION AND MEANDER LINES~~  
OF  
Township No. *160* North, Range No. *31* West  
OF THE  
*5<sup>th</sup>* Principal Meridian,  
IN THE STATE OF MINNESOTA,  
AS SURVEYED BY  
*Chas. H. Armstrong*  
*Scamman*  
4<sup>th</sup> S. DEPUTY-SURVEYOR,  
Under his contract No. *77*  
Dated \_\_\_\_\_, 190...  
Survey commenced *December 6*, 1902  
Survey completed *December 11*, 1902

Figure 4.13 Title page, Armstrong's exterior retracement notes. (Image from Bureau of Land Management, General Land Office Records, 2012 Vol. 309)

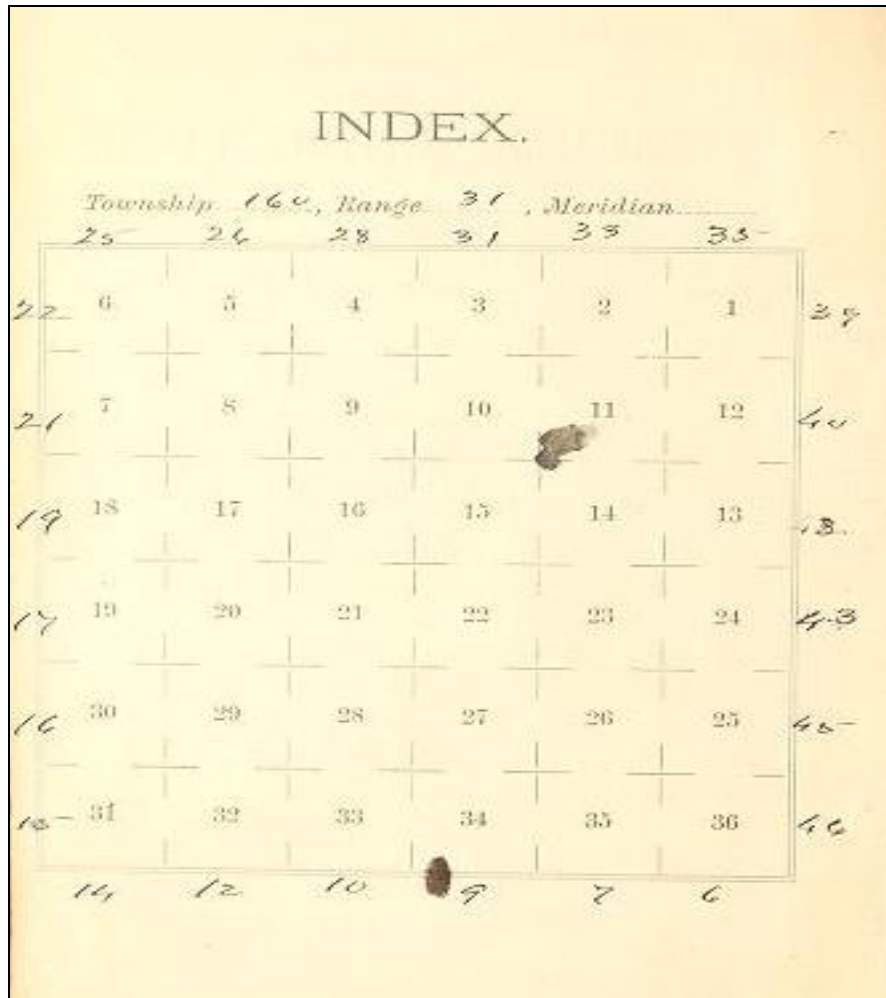


Figure 4.14 Index diagram showing how Armstrong retraced the township exteriors.<sup>65</sup>  
 (Image from Bureau of Land Management, General Land Office Records, 2012 Vol. 309)

<sup>65</sup> Numbers printed outside the township lines refers to the page in the volume on which the notes for a particular line segment can be found.

FIELD NOTES

OF THE SURVEY OF THE

SUBDIVISION AND MEANDER LINES

OF

Township No. 160 North, Range No. 9 West

OF THE

5<sup>th</sup> Principal Meridian,

IN THE STATE OF MINNESOTA,

AS SURVEYED BY

*Charles H. Armstrong*  
*Commissioner for George A. Rath*  
 U. S. DEPUTY SURVEYOR,

Under his contract No. 72

Dated November 6, 1896, 1896

Special Instructions, to Commissioner

Dated August 21, 1902,

Survey commenced Dec 5, 1902

Survey completed Dec 31, 1902

Figure 4.15 Title page, Armstrong's subdivision notes in Volume 417.<sup>66</sup> (Image from Bureau of Land Management, General Land Office Records, 2012)

<sup>66</sup> The Title page does not state Armstrong retraced the exteriors but the Certification page does, see Figure 4.16, as does the township plat.

M-83

CERTIFICATE.

SURVEYOR-GENERAL'S OFFICE,  
ST. PAUL, MINN., *June 1*, 190*3*

The foregoing field notes of the survey of the ~~sub-~~  
*Exterior Subdivisions - Alexander*  
~~division and meander lines~~ *of T.160 N. R.31 W.*  
*4*

of Township No. *160* North, of Range No. *31*  
of the *Fifth* Principal Meridian, Minnesota,  
executed by *Charles H. Armstrong*  
*Compassman for George A. Ralph*  
*under Special Instructions dated*  
*August 21 1902*  
under ~~the~~ contract of the *6<sup>th</sup>* day  
of *November* 189*6*, 190*2*, in the month of  
*December*, 190*2*, having been critically  
examined, the necessary corrections and explanations  
made, the said field notes, and the surveys they  
describe, are hereby approved.

*J. S. Warner*  
Surveyor-General.

Figure 4.16 Certification page of Armstrong's exterior and subdivision field notes in Volume 417. (Image from Bureau of Land Management, General Land Office Records, 2012) <sup>67</sup>

In his annual report dated July 8, 1903, Warner reported that Armstrong had completed the surveys at a cost of \$626.81 and that the office work had also been completed. (United States Congress. House. 1903)

The township plat was certified August 5, 1903 and the plat legend shows that Armstrong was the sole deputy involved in the survey. (Fig. 4.17)

<sup>67</sup> Volume 417 only contains the subdivision notes of T.160N R.31W. Volume 309 contains the exterior notes to the township, which were not certified.

9

Area of Public Land 22876.84 Acres		of Water Surface 85.31 Acres		Total number of Acres 22962.18			
Surveys designated	By whom surveyed	Date of Contract	Amount of surveys			When surveyed	Mean declination
			M	Ch <sup>s</sup>	Lk <sup>s</sup>		
Township lines	Chas. H. Armstrong	Spec <sup>l</sup> Instructions					
	(Compassman for Gen. A. Ralph.)	Aug. 21 <sup>st</sup> 1902					
" " Retraced		Contract Nov. 6 <sup>th</sup> 1896				1902.	
			23	51	74		
Subdivisions			59	72	71	Commenced Dec. 5 <sup>th</sup> 1902.	
Meanders			3	14	55	Completed Dec. 31 <sup>st</sup> 1902.	
Connections			1	15	46		

Figure 4.17 Legend. Plat of township 160N. Range 31W. (Image from Minnesota Geospatial Information Office, 2012b)

Finally, on November 20, 1903 the Commissioner sent the following letter to Warner (Fig. 4.18)

E  
192195-1903

DEPARTMENT OF THE INTERIOR,  
GENERAL LAND OFFICE,  
WASHINGTON, D. C.,

November 20, 1903.

ADDRESS ONLY THE  
COMMISSIONER OF THE GENERAL LAND OFFICE

Subject: Acceptance of survey.

The U. S. Surveyor General,  
Saint Paul, Minnesota.

Sir:

I am in receipt of your letter dated November 12, 1903, transmitting the returns of the survey of T. 160 N., R. 31 W., 5th P.M., Minnesota, as executed by Chas. H. Armstrong, compassman for George A. Ralph, D.S., under contract No. 72, dated November 6, 1896.

It appears that all of the errors reported to you by letter "E" dated October 28, 1903 have now been corrected, and as the returns are otherwise within the requirements of the Manual and special instructions the survey of said T. 160 N., R. 31 W., is hereby accepted.

You are directed to file the triplicate plat in the proper local land office.

Very respectfully,

*L. J. Finkle*  
Acting Commissioner.

L.J.

Figure 4.18 Acceptance of Charles H. Armstrong's survey. (Image from MHS collection. United States Surveyor General of Minnesota, Letters Received 1903 vol. XC)



#### **4.6 Norris Y. Taylor (Squires, 2012a 18 footnote 10; Figs. 4.19 - 4.33)**

On April 3, 1903 Norris Y. Taylor, who decades earlier had worked as a deputy surveyor and was then the Meeker County surveyor, and Charles A. Forbes, then Dakota County surveyor, sent a letter to Eli S. Warner, Surveyor General of Minnesota asking for a contract to subdivide T.68N R.23W and T.66N R.24W in northern Minnesota. With their application they enclosed affidavits regarding their competency and several testimonials. They stressed in their applications that both were familiar with the solar compass. (United States. Office of Surveyor General of Minnesota, 2012c)

The following month, on May 25 1903, Warner awarded Taylor, then living in Litchfield, and Forbes, then living in St. Paul, contract, No. 112, to survey, “All the subdivisions and meander lines in Township No. 68 North of Range No. 23 West and Township No. 66 North of Range No. 24 West of the Fourth principal meridian in the State of Minnesota.” (Fig. 4.19) In addition they were to,

retrace or resurvey all such portions of the exterior boundaries of said Townships which have been heretofore have been surveyed which are found to be defective in alinement (sic) or measurement and which may be necessary for the proper execution of the subdivisional survey of said townships. (United States. Office of Surveyor General of Minnesota, 2012c Folder 7)

The two deputies were to be paid at the same rate that George Ralph was paid and the contract estimated to cost \$1,200, chargeable to the appropriations act passed by Congress on June 28 1902 for the surveys of the public lands in the fiscal year ending June 30, 1903. They were to finish their work and return the field notes on or before December 1, 1903. Taylor made his oath on May 25 and Forbes three days later and the two signed their Bond on June 11, 1903, with the United States Fidelity & Guaranty Company acting as surety. On June 22, 1903 Acting Commissioner of the General Land Office wrote to Warner that he had received the duplicate of contract and bond no.112 dated March 25, 1903 awarded to Taylor and Forbes with his letter of June 15, 1903 and approved the contract. (Fig. 4.20) The Surveyor General issued the special instructions to describe how the deputies should proceed. (Fig. 4.21)

68-23  
66 24

*Triplicate*

4-666.

**CONTRACT AND BOND.**

No. 112

Office of U. S. Surveyor General,

St Paul, Minnesota

May 25, 1903

Eli S. Warner  
U. S. Surveyor General.

Norris H. Poyer, and  
Charles A. Porter  
U. S. Deputy Surveyor.

\$ 1200.-

Payable from the appropriation  
for surveys and surveys of  
public lands for the fiscal year  
ending June 30, 1903.  
T. 6 S. R. 23 Accepted Nov 7, 1906  
Approved June 22, 1903  
Time extended to April 1, 1904  
Commissioner of the General Land Office.  
Time extended to Oct 15, 1904

Recorded in Contract Book No. \_\_\_\_\_, page \_\_\_\_\_

17,029-2,000. 6-1242

Figure 4.19 Contract No. 112 May 25, 1903 (Image from MHS collection United States. Office of Surveyor General of Minnesota, 2012c)

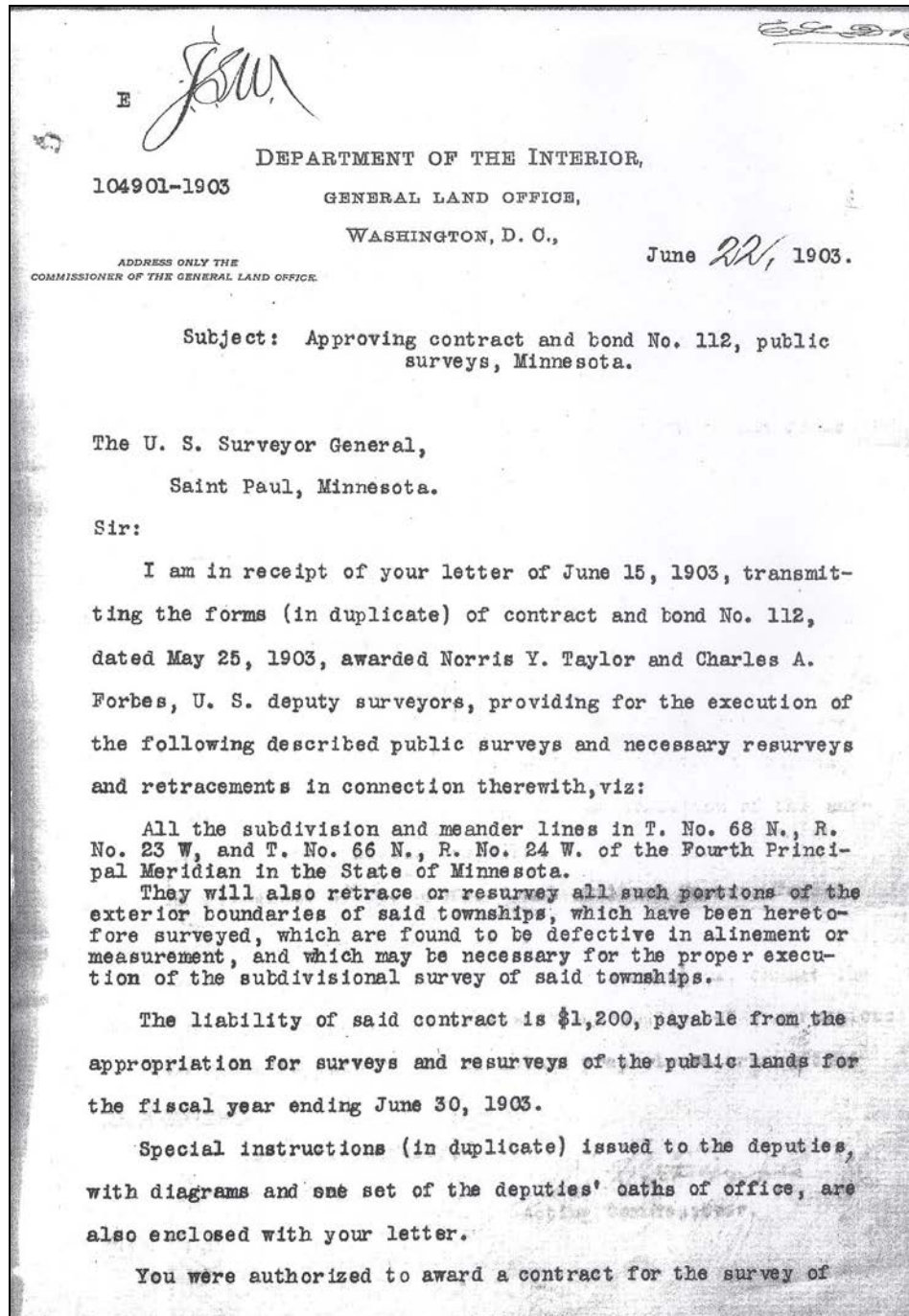


Figure 4.20 Commissioner approval of Norris Y. Taylor and Charles A. Forbes contract of May 25, 1903

the designated townships per office letters "E" of January 22 and February 4, 1903, respectively.

You submit testimonials as to the qualifications of Messrs. Taylor and Forbes, and state that both have high reputations for integrity and ability, and you are confident they will do good work.

In reply you are advised that on examination of the forms of contract and bond No. 112, as submitted, the same are found to be properly prepared.

The special instructions issued to the deputies in connection with the execution of the work (except as hereinafter referred to), are deemed satisfactory.

I have, accordingly, this day approved contract and bond No. 112 (in duplicate), and the accompanying special instructions, awarded and issued to Norris Y. Taylor and Charles A. Forbes, U. S. deputy surveyors, providing for the execution of the surveys and resurveys therein described.

The evidences of the professional skill of Messrs. Taylor and Forbes, as submitted, are accepted.

On page 2, line 7, of the special instructions, change the word "wast" to "east". The "original" and "duplicate" instructions

The deputies' oath of office should properly be transmitted in duplicate.

Very respectfully,

*J. H. Finkle*  
Acting Commissioner.

L.J.

Figure 4.20 cont. Commissioner approval of Norris Y. Taylor and Charles A. Forbes contract of May 25, 1903 (Images from MHS collection. United States. Surveyor General of Minnesota, Letters Received vol. XC 1903)



Surveyor General's Office,  
St. Paul, Minn., May 25, 1903.

Norris Y. Taylor &  
Charles A. Forbes, (Deputy Surveyors, as on the attached list.)

Sirs:-

In addition to printed instructions contained in the Manual of Instructions to Surveyors General, dated January 1, 1902, furnished you, the following special instructions are issued for your guidance in the execution of surveys under your Contract No. 112 of this date.

You will carefully observe every detail specified in said Manual, and if for sufficient cause an instructions cannot be complied with in any stated case, that cause should always be stated in the field notes in its proper connection. In the absence of this precaution on your part any inference in your favor cannot be entertained at this office, when examining your returns.

Herewith you are furnished a diagram of the exterior corner lines of the townships to be subdivided by you, showing the topography, courses and measurements of the lines heretofore surveyed, according to the field notes of the surveys thereof on file in this office.

As the townships on the South, West, North and East sides of T. 88N. R. 23W., have been subdivided no change can be made in boundaries of said townships except that errors in measurement may be corrected by establishing corners common to two sections at intervals of 60 chains; and  $\frac{1}{2}$  section corners at intervals of 40 chains in direct line between adjacent old corners and altering the markings on said old corners so that they may reference only to the sections in the adjacent townships.

As an examination of the diagram of T. 88N. R. 23W., shows that the south boundary of said township is defective and that a true line between the old corners will be required.

Figure 4.21 Special instructions Norris Y. Taylor and Charles A. Forbes May 25, 1903

in alinement, a Sectional Correction line, as defined in Section 272 on page 84 of the Manual of 1902, will be run due West, from the corner of Secs. 25, 30, 31 and 36 on the ~~east~~ boundary of the township, to its intersection with the West boundary of the township, where a closing corner will be established. You will note distance to the nearest corner of said township line.

If the ~~West~~ <sup>East</sup> boundary of the Township is found to be defective in alinement, a Sectional Guide Meridian will be run from the corner of sections 25, 28, 35 and 36 on a true line due North to its intersection with the North boundary of the township where a closing corner will be established.

The townships on the South, East and North sides of T. 66 N., R. 24 W., having been subdivided no change can be made in said boundaries except that errors in measurement may be corrected by establishing corners common to two sections at intervals of 80 chains, and  $\frac{1}{4}$  Section corners at intervals of 40 chains, in direct line between adjacent old corners, and altering the markings on said old corners so that they will have reference only to the sections in the adjacent townships.

The township on the West side of T. 66 N., R. 24 W., not having been subdivided, if you find the Range line between Ranges 24 and 25, T. 66 N. to be defective in alinement or position, as defined on pages 79 and 80 of the Manual of 1902, you will run and establish said Range line from the corner of Tps. 65 and 66 N., Rs. 24 and 25 W., North on a true meridian, to the intersection with the North line of T. 66 N. where you will establish a closing corner and note the distance East or West to the old township corner and change the markings on the old corner to a corner common to two sections. If said Range line is erroneous in measurement only, you will resurvey said line and establish section and  $\frac{1}{4}$  sections corners at proper intervals on a true line between the old township corners, and destroy all erroneous corners on said line.

Figure 4.21 cont. Special instructions Norris Y. Taylor and Charles A. Forbes May 25, 1903



-3-

Attached hereto is a copy of a circular letter of instructions to U.S. Surveyors General, dated June 16, 1898, regarding retracements and resurveys, and which is hereby made to form a part of these special instructions.

The surveys under your Contract, must all be made with a Solar Compass or instrument working independently of the magnetic needle.

All surveys should be executed in the first instance, so as to bear a critical test in the field, and the utmost care should be taken in the preparation of the field notes prior to submitting the same. The preparation of the original field notes prior to filing them in the Surveyor Generals Office is especially important, in view of the regulation contained in Section No. 200 on page 69 of the Manual of 1892.

In order that accounts for high rates may be properly adjusted your field notes must show the exact chainage at which you enter and leave land heavily timbered, mountainous or covered with dense undergrowth; and in your description at the end of each mile run, you must state the exact distance, in chains and links, which is of such character. The increased compensation cannot be allowed, however, unless both plats and field notes show conclusively the character of the country to be such as shall admit of high rates: otherwise only the minimum rates will be allowed.

The diagram returned with your field notes must show a complete correspondence with the descriptions contained in your notes.

The notes must show from point to point on the line the exact character of the country; while there and in the general description at the end of the line run, the exact wording of the appropriation Act should be used; as heavily timbered, mountainous, or covered with dense undergrowth.

Figure 4.21 cont. Special instructions Norris Y. Taylor and Charles A. Forbes May 25, 1903

-4-

Each note relative to entering and leaving such land should appear in separate lines, so as to be distinct from other entries.

You will note all improvements of settlers found in the execution of your surveys, and state the exact location and the approximate value of such improvements.

If, in the progress of your surveys, you find any tracts of land, which, for their scenic beauty, natural wonders or curiosities, ancient ruins, or springs of medicinal or other properties, should be protected or utilized in the interest of the public, you will note, in the field notes, the exact location of the same, with a definite description of the peculiarities of the tracts.

You are required to execute in your own proper person, all surveys provided for in your contract, and the employment of a compassman will not be allowed except in case of positive disability to complete the work, and in such case, all facts must be reported to this office, and authority be obtained from the Commissioner of the General Land Office, for the employment of a compassman to complete the work.

You are especially instructed that the estimated liability of your contract must not be exceeded under any circumstance, and that no authority will in future be granted to create an excess liability over and above the amount estimated and provided for in your agreement.

Extensions of time in which to complete your surveys and make returns thereof, in future, will be allowed for good and sufficient cause only, and for delays wholly beyond the control of yourself, full and satisfactory reasons must be given, or the application will not be allowed; and all applications must be made in time to admit of the consideration thereof by the Commissioner of the General Land Office, prior to the date of expiration as fixed in the contract, and must be accompanied by

Figure 4.21 cont. Special instructions Norris Y. Taylor and Charles A. Forbes May 25, 1903



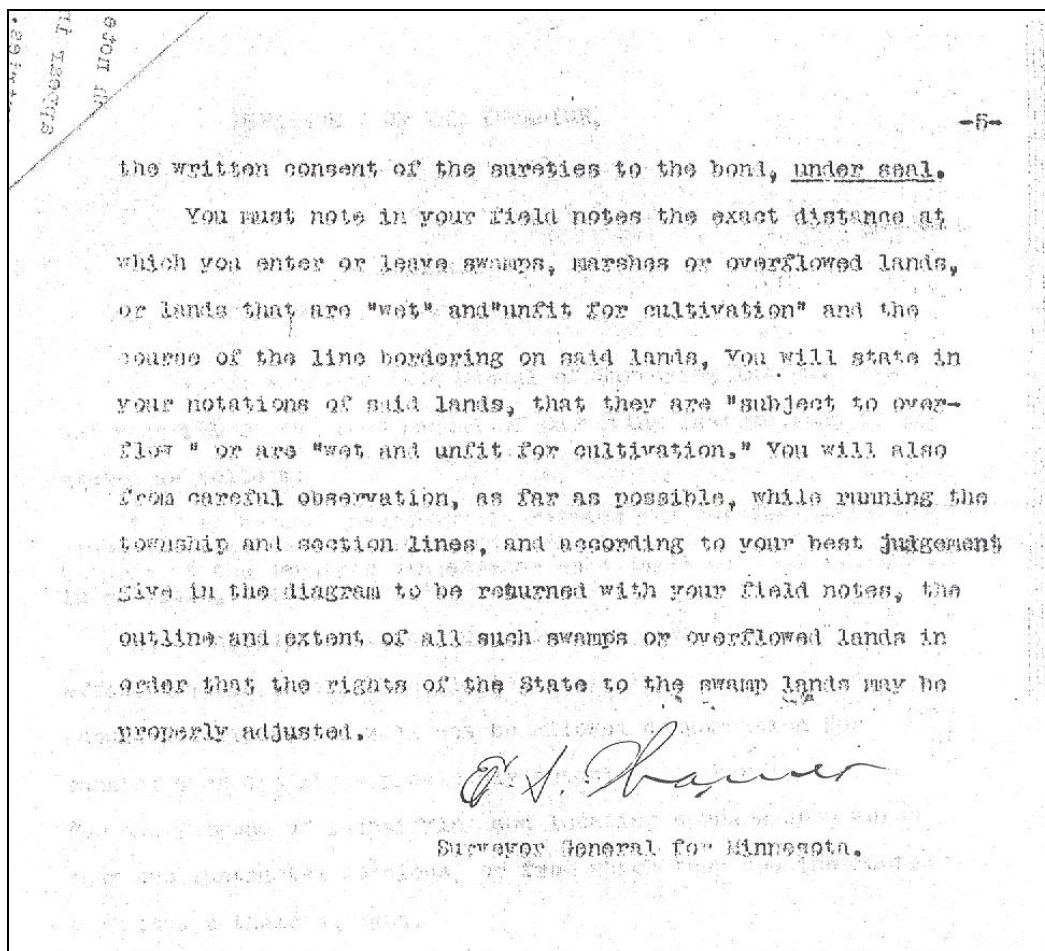


Figure 4.21 cont. Special instructions Norris Y. Taylor and Charles A. Forbes May 25, 1903 (Images from MHS collection United States Office of Surveyor General of Minnesota, 2012c) <sup>68</sup>

Included in the folder containing these materials is a Circular dated June 15, 1898 from Commissioner Binger Herman. (Figure 4.22)

<sup>68</sup> These special instructions are not in the correspondence files

DEPARTMENT OF THE INTERIOR,  
General Land Office,  
Washington, D.C., June 15th 1898.

**CIRCULAR**

In cases of retracement provided for in the instructions  
To United States Surveyor General.

Sir:-

On page 224 of the 1894 Manual of Surveying Instructions,  
and page 191 of the 1892 Manual of Surveying Instructions it is  
stated as follows:

" If it becomes necessary to retrace any of the exterior  
lines in order to properly close their lines of survey, it must  
be done at the deputy's own expense as a legitimate contingent  
in executing the contract."

The construction to be put upon this paragraph is to the  
effect that deputies, when closing their lines upon old work  
should not expect and will not be allowed compensation for  
running over the lines previously established, when it is done  
for the purpose of identifying and locating corners upon which  
they are instructed to close, or from which they are instructed  
to initiate their surveys.

The paragraph is not intended to disallow compensation for  
retracements made for the purpose of accounting for connections  
and closings upon previously surveyed lines, and for the purpose  
of vindicating the distances and bearings of these connecting  
and closing lines in cases where the absence of such showing  
would be considered by this office to indicate a failure on the  
part of the deputy to conform his work to the requirements of  
the Manual.

For example, suppose, the deputy is required to establish  
the N.W. and S. boundaries of section 13, the range line having  
been previously established and accepted, and his latitudinal  
lines differ in length more than the limit allowed by the Manual  
it will be the duty of the deputy to retrace the east boundary  
of this section and note the alignment in order to explain the  
excess of difference.

Figure 4.22 Circular June 15, 1898.



In the same manner an excess of closing on this east boundary when running the latitudinal lines of said section will have to be accounted for by a remeasurement of said boundary.

In cases of closings upon previous work in the interior of a township, the deputy often finds that this line shows an excess over limits of several chains in alinement and measurement on opposite sides of a section. His duty in such cases is to re-run the section boundaries adjoining his work to locate the error, and reset the corners if found dilapidated or insufficiently witnessed. If no error in excess of limits is discovered, payment will not be allowed for the reason that the deputy's own work will thus inferentially be shown defective. He is not required to re-run lines beyond those of the adjoining section.

In another example: Suppose the deputy in subdividing a township, the north boundary of which is already accepted, and the adjoining township on the north subdivided and accepted, finds the length of his closing lines in the north tier, and the distances on the north boundaries of the sections of this tier to be in excess of the limits, he should retrace and remeasure the north boundary of the township and report the measurements re-establishing dilapidated and defective corner monuments at the time. If the line as re-run by him proves to be within limits he will not be paid for the resurvey; but if the line be out of limits he is entitled to compensation therefor.

Deputies will also be instructed that in any case of finding a misclosure, in connecting new surveys with accepted surveys, the presumption is in favor of accepted work instead of the new lines being run, provided no evidence to the contrary exists. A single trial or random line by the 1st deputy cannot be held to discredit the connected system of work previously accepted under a previous contract. Hence a deputy must first retrace and examine those of his own lines liable to contain the error which caused said misclosure.

Figure 4.22 cont. Circular June 15, 1898.

If he then finds his own work accurate, and is willing to abide by the result of an inspection thereof, he is required to retrace the older line in which he suspects error, and justify his own work by showing the true condition.

This principle is the basis of the first paragraph on page 53 of the Manual, and is a condition precedent to the retracements treated of in this circular.

In cases where the deputy is subdividing a township the boundaries of which are entirely or partly obliterated, and he cannot in closing thereon identify or locate some of the corners he should reestablish the lines in accordance with the rule laid down in the Manual, pages 72, 73 and 74. Other cases are treated of in those pages in which deputies will be governed by the directions therein given. It is not necessary to make suppositions as to every variety of circumstance which the deputy is liable to encounter. It is sufficient to state that retracements and resurveys not specifically provided for in the deputy's special instructions, which are deemed by the deputy to be necessary to make a consistent showing of his work (this office to decide as to the necessity thereof when finally passing upon the work), and retracements and resurveys found necessary by reason of obliteration will be paid for, satisfactory evidence being required in all cases that they were necessary.

These retracements must be corroborated by the examiner before the deputy will be allowed compensation, and retracements thus made, as well as resurveys, will be noted in the data furnished by the Surveyors General to the examiner when starting for the field inspection, and the latter will be required to examine each mile or portion of a mile of such retracements in order to verify the work done by the deputy for which he asks compensation.

When the special instructions accompanying the contract specify that certain lines of old surveys are to be re-estab-

Figure 4.22 cont. Circular June 15, 1898.



-4-

lished, resurveyed, or retraced, if certain conditions are met with, and such work is performed in compliance therewith, there will be no question as to the compensation therefor.

You are further directed to notify deputies that retracements made for the purpose of accounting for connections and closings made on lines of old surveys, and to justify the length and bearing of connection and closing lines, where the absence of such would indicate failure to perform the requirements of the Manual, will be paid for at the minimum rate per mile named in their contracts for the class of lines retraced, (base lines, standard lines, and guide meridians, being classed as township lines, as the manual does not require that such lines when retraced be doubly chained in any instance), provided the re-establishments, resurveys, and retracements, stated in his notes are corroborated by the field examiner.

For reestablishments and resurveys (those which involve the establishment of corners), the deputy will be paid at the rates per mile named in his contract for the class and character of lines reestablished or resurveyed.

In restoring lost or obliterated corners the deputy will, when it is applicable, follow the pamphlet instructions for "Lost or Obliterated Corners and Subdivision of Sections" issued by the General Land Office Oct. 18, 1896 a copy of which accompanies the Manual now in his possession.

Notes of re-establishments, resurveys, and retracements will be full notes in every particular, and they will be incorporated in a book by themselves. The title page thereof will clearly state as usual, the surveys made, when and by whom, and under what authority. Following the index will be affidavit by the deputy explanatory of the lines so re-established, resurveyed, or retraced, and setting forth the absolute necessity therefor. Following this affidavit will be the usual preliminary oaths of assistants covering the retracements or resurveys. Then will follow the notes of said surveys.

Figure 4.22 cont. Circular June 15, 1898.

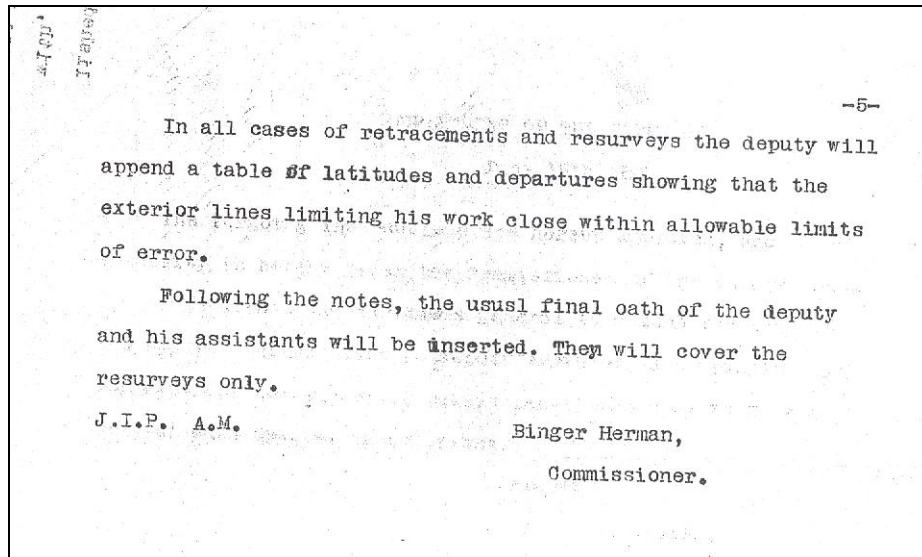


Figure 4.22 cont. Circular June 15, 1898. (Image from MHS collection. United States Office of Surveyor General of Minnesota, 2012c)

Attached to the Circular is the following letter from the Secretary of the Interior.

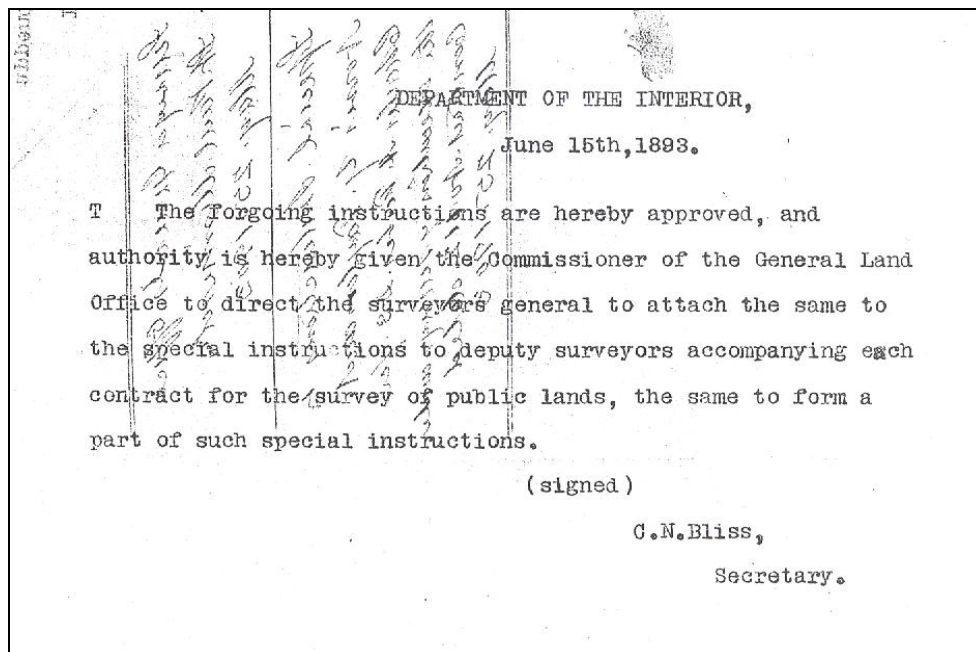


Figure 4.23 Letter accompanying Circular June 15, 1898. (Image from MHS collection United States Office of Surveyor General of Minnesota, 2012c)

On August 21, 1903 Forbes transferred all his interest in the contract to Taylor. In an affidavit dated October 19 accompanying his request for more time to complete his contract, Taylor explained why. As they were about to go into the field about August 1, 1903,

(It was found that Charles A. Forbes would be detained as a witness in some Law

suits regarding surveys in the city of St. Paul, and deponent thinking the time ample within which to perform such surveys agree to make the same alone. (United States. Office of Surveyor General of Minnesota, 2012c)

In that same affidavit, he also explained why he was forced to ask for an extension of his contract until April 1, 1904,

(A)bout the time we were ready to commence work a rainy season began, to wit: on the 27th day of August 1903, it was wet and cloudy for three (3) days. That it began to rain on Sept., 6th and continued rainy and cloudy with only an occasional sight of the sun until the 18th, by this time the swamps were full of water and the work was growing more difficult and two of my men quit owing to the wet and discomfort. From the 18th to the 28th the days were partially clear, but with rain of nights, on the 30th of September there began an other (sic) rainy period extending up to Oct. 6th when all streams became impassible and the swamps were overflowing so it was absolutely impossible to make any progress with the work, and as I found it necessary to engage almost an entire crew of men, I stopped trying to work and came home, expecting to wait until the swamps froze up before I attempted to complete the survey. ((United States. Office of Surveyor General of Minnesota, 2012c)

In a letter dated October 19, his sureties agreed to the extension, as did the Surveyor General on October 31 who also wrote,

All of my deputies have been obliged to suspend work in the field, on account of excessive rains flooding the swamps, and raising the water in the streams to such an extent as to render it impossible to continue the work until it freezes up. (United States. Surveyor General of Minnesota. Letters Sent vol.15 393)

On November 6 Commissioner Herman also approved the extension stating,

As all applications for extension of time under approved contract for public surveys should be submitted in duplicate, I enclose therewith the one form of application received with your letter of October 31, 1903, and this day approved; and you are requested to prepare and transmit a certified copy of said application for filing as the "duplicate." (United States. Surveyor General of Minnesota. Letters Received Vol. XC 1903)

Early the following year Taylor requested a second extension, until October 15, 1904. In an affidavit dated March 1 accompanying his application he stated,

(T)hat from the 27<sup>th</sup> day of August 1903, I was in field with a crew of men attempting to make a survey of the said towns, but was unable to do so by reason of the impossible weather.

That I did on the 30<sup>th</sup> day of November return and again attempt to complete the said survey but was prevented by reason of deep and continued snow, that prevented the

swamps from freezing, and also hung to the dense balsam brush and timber to the extent that the warmth from our bodies melting the snow; that the instruments became incased in ice and the clothing of the men was wet through in a few hours making it impossible to continue in the field, but I continued working up to the 22nd day of December when I abandoned the work for the second time. That in this high latitude the sun in its extreme southern declination cannot be observed above the thick spruce and balsam timber that abounds a sufficient length of time in a day to run true lines, for these reasons I ask that this contract be extended to the 1st day of November 1904. (United States. Surveyor General of Minnesota, 2012c)

In a letter written sometime in March his sureties agreed and on March 15, 1904 Warner approved an extension until October 15. (United States Surveyor General of Minnesota Letters Sent vol.15 111) Two weeks later the Commissioner also approved the extension until November 1, 1904 while enquiring why Forbes did not sign the extension. (United States. Surveyor General of Minnesota. Letters Received vol. XCI 1904)

Taylor completed his surveys but errors were found in them and he was required to correct them. On October 28 he requested a third extension of his contract. In an affidavit dated October 20 1905 accompanying the request he wrote,

(O)wing to my age and present condition of health it would be almost impossible for me to stand the exposure that I would be forced to endure if I should be compelled to again attempt the necessary work that I would have to do to make the corrections on the survey of the said contract.

My actual field service as Deputy or paid compassman dating back to 1870 that I have always prided myself on doing good and satisfactory work and that I would be glad if the opportunity to complete this the last work I shall ever attempt for the Government. That I have heretofore stated to the Department the very impossible weather that prevailed while I was engaged on this work; that the sun will be so far south that test lines will be hard to run in a country like this where the evergreen timber is so thick. (United States. Surveyor General of Minnesota, 2012c)

He asked that his contract be extended until July 1, 1906 to make the corrections, thus allowing him to carry out the work during the months of May, June, and July. Warner agreed to the extension on October 21, 1905 (United States. Surveyor General of Minnesota. Letters Sent vol. 17 474) and so did his sureties the following week.<sup>69</sup> On November 10, 1905, however, the Commissioner denied the extension stating that the “time on contract has expired.” Nevertheless he wrote that an “extension of time to make required correction of errors in survey is granted.” (United States. Office of Surveyor General of Minnesota, 2012c)

Taylor’s notes for retracing the east, west, and south exteriors of T.68N R.23W and subdividing it can be found in volume.194. (Bureau of Land Management. General Land Office Records,

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<sup>69</sup> In his letter Warner erroneously stated that Taylor had made his application for an extension on October 17, 1905



2012) (Fig. 4.24) They were certified by Surveyor General Warner on February 20, 1905 (Fig.4.25) The plat of the township was approved by the Surveyor General on August 4, 1905 and sent to the Commissioner the same day.<sup>70</sup> (Fig. 4.26, 4.27) and a note on the plat margins shows that the Commissioner accepted the plat February 7, 1906.

**FIELD NOTES**

OF THE SURVEY OF THE

**SUBDIVISION AND MEANDER LINES**

OF

Township No. 68 North, Range No. 23 West

OF THE

4th Principal Meridian,

IN THE STATE OF MINNESOTA,

AS SURVEYED BY

H. Y. Taylor

U. S. DEPUTY SURVEYOR,

See 1

Under ~~the~~ contract No. 112

with H. Y. Taylor & Charles A. Smith

Dated May 25, 1903

Survey commenced Sept 21, 1903

Survey completed Oct 15, 1904

Figure 4.24 Title page from Field Notes to T.68N R.23W, Volume 194 (Image from Bureau of Land Management. General Land Office Records, 2012)

<sup>70</sup> In the top right-hand corner of the Commissioner's plat is a notation "Received with Sur. Gen'l's Letter Aug 4<sup>th</sup> 1905"

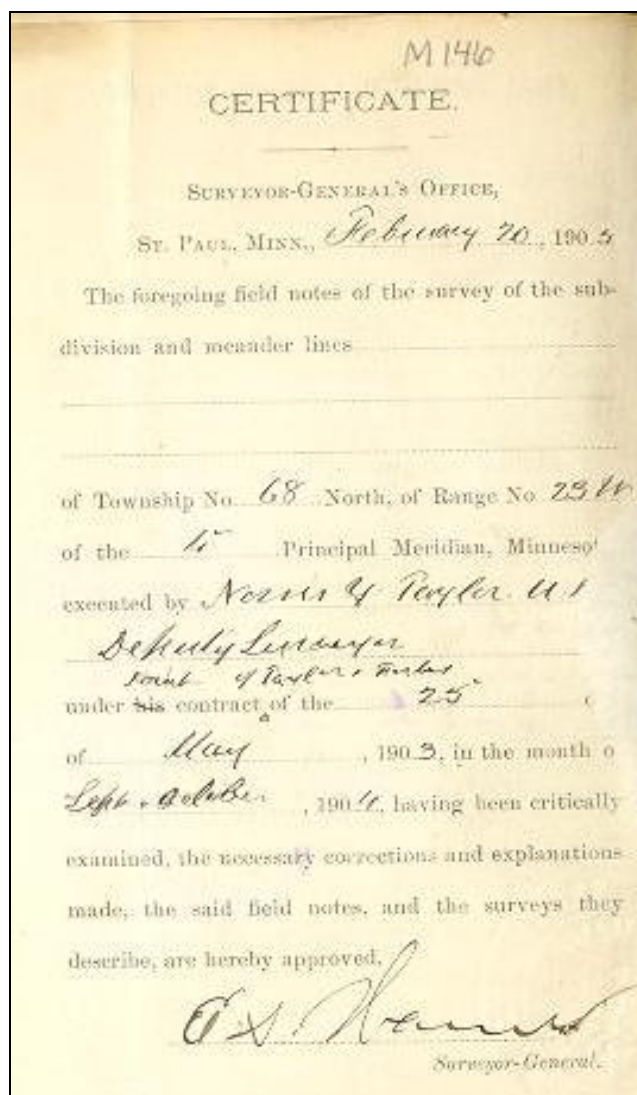


Figure 4.25 Certification of Field Notes to T.68N R.23W Volume 194. (Image from Bureau of Land Management. General Land Office Records, 2012)

C.L.G. Area of Public Land 23,007.42 Acres of Water Surface 00 Acres Total number of Acres 23,007.42						
Surveys designated	By whom surveyed	Date of Contract	Amount of surveys			When surveyed
			M	Ac	La	Mean declination
Retraced Township lines S.E.	Norris Y. Taylor	No. 112 May 25 1903	17	73	53	8.00 E.
Subdivisions	" " "	" " " " "	59	76	22	Commenced Sept. 21 1904 Completed Oct. 15 1904
Meanders	" " "	" " " " "				
Connections	" " "	" " " " "	1	00	54	

Figure 4.26 Legend. Original plat T.68N R.23W.  
(Image from Minnesota Geospatial Information Office, 2012b)

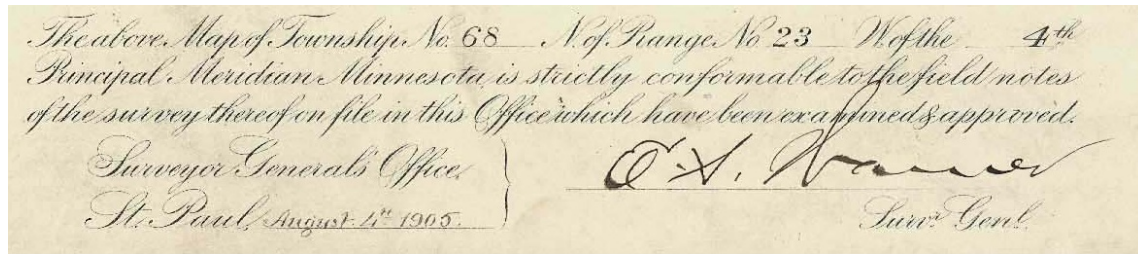


Figure 4.27 Legend. Original plat T.68N R.23W.  
(Image from Minnesota Geospatial Information Office, 2012b)

Taylor's notes for subdividing T.66N R.24W can be found in Vol. 208. (Bureau of Land Management, General Land Office Records, 2012) Interestingly, there are three title pages; one for the discontinued surveys, those he started on September 3 before asking for a first extension (Fig. 4.28), one for the suspended surveys, which he carried out between September 3, 1903, and October 21, 1904 (Fig. 4.29) and one for the corrections he made May 19 – June 7, 1906. (Fig. 4.30) His notes and the original plat show that he retraced the east and south exteriors.

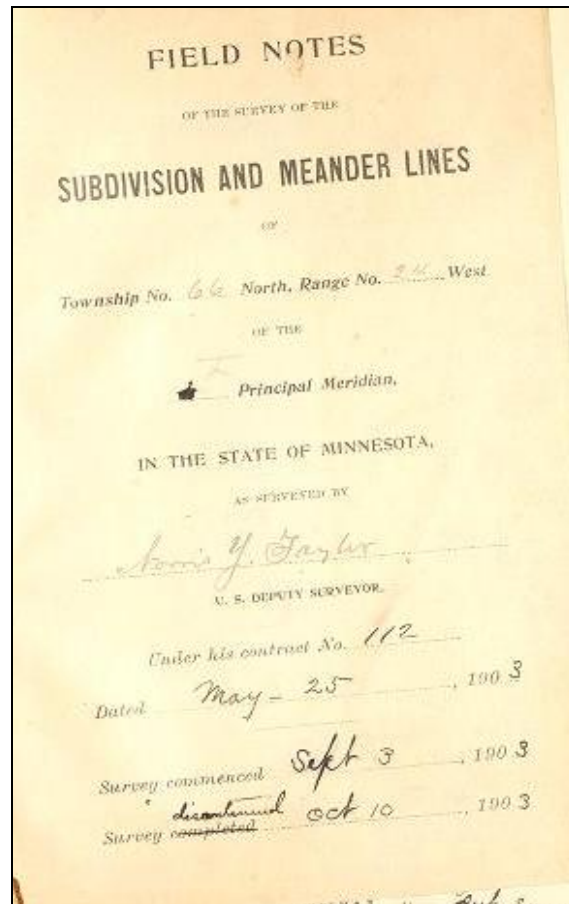


Figure 4.28 Title page for discontinued surveys. (Image from Volume 208 Bureau of Land Management, General Land Office Records, 2012)

**FIELD NOTES**

OF THE SURVEY OF THE

**SUBDIVISION AND MEANDER LINES**

OF THE

Township No. 66 North, Range No. 24 West

OF THE

4<sup>th</sup> Principal Meridian,

IN THE STATE OF MINNESOTA,

AS SURVEYED BY

Storis Young Taylor

U. S. DEPUTY SURVEYOR,

Under his contract No. \_\_\_\_\_

Dated May 25<sup>th</sup>, 1903.

Survey commenced Sept 3<sup>rd</sup>, 1903

Survey completed Oct 21<sup>st</sup>, 1904

Work suspended Oct 10, 1903, acct floods

" " Dec. 22, 1903 " acct snow

Figure 4.29 Title page for suspended surveys. (Image from Volume 208 Bureau of Land Management, General Land Office Records, 2012)

FIELD NOTES  
*of Corrections of*  
OF THE SURVEY OF THE

**SUBDIVISION AND MEANDER LINES**

OF

Township No. 66 North, Range No. 24 West

OF THE

4<sup>th</sup> Principal Meridian,

IN THE STATE OF MINNESOTA,

AS SURVEYED BY

N. G. Taylor

U. S. DEPUTY SURVEYOR,

Under ~~his~~ contract No. 112

Dated May 25, 1903  
*with N. G. Taylor & Chas. A. Porter*

Survey commenced May 17, 1906

Survey completed June 7, 1906

Figure 4.30 Title page for corrections. (Image from Volume 208 Bureau of Land Management, General Land Office Records, 2012)

The Surveyor General approved the notes of the suspended and discontinued surveys on February 20, 1905 and the corrections on July 20, 1906. (Fig. 4.31) Warner certified the plat for T.66N R.24W on August 4, 1905 and, according to a notation on the right hand margin of the original plat, the Commissioner accepted the plat on February 7, 1906. (Minnesota Geospatial Information Office, 2012b)



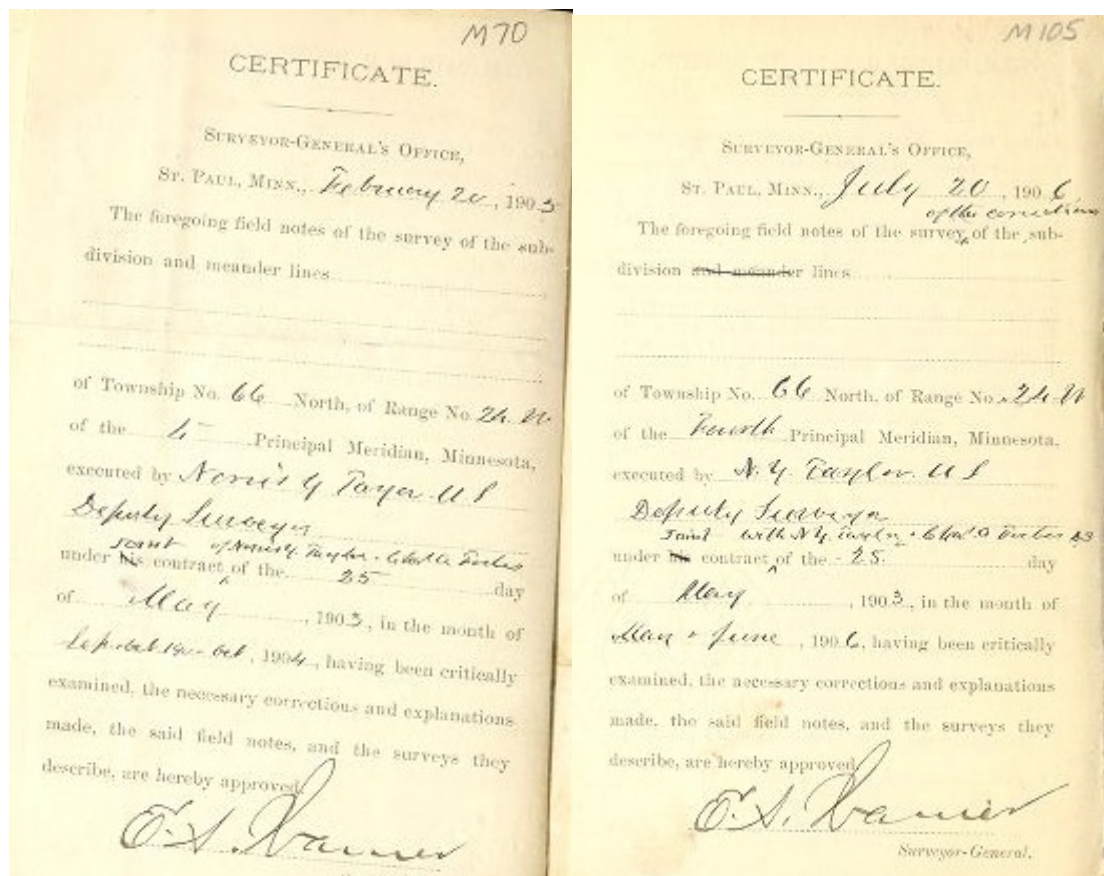


Figure 4.31 Certification of suspended notes (left) and corrected notes (right) for T.66N R.24W. (Image from Volume 208 Bureau of Land Management, General Land Office Records, 2012)

Area of Public Land 22,871.48 Acres			of Water Surface 400.76 Acres			Total number of Acres 22,972.24		
Surveys designated	By whom surveyed	Date of Contract	Amount of surveys			When surveyed	Mean declination	
			M	Ch <sup>s</sup>	Lk <sup>s</sup>			
Township lines S & E	Norris V. Taylor	No. 112, May 23, 1903	12	00	25		N 8° 0' E.	
Subdivisions	22 22 22	22 22 22 22 22	59	72	48	Commenced Sept. 3 <sup>d</sup> 1903, Completed Oct. 21 <sup>st</sup> 1904		
Meanders	22 22 22	22 22 22 22 22	9	24	00			
Connections	22 22 22	22 22 22 22 22		17	45			

Figure 4.32 Legend for plat of T.66N R.24W certified August 4, 1905. (Image from Minnesota Geospatial Information Office, 2012b)

A final document should be mentioned relating to Taylor's survey. Among the various documents contained in a folder from which much of the information about Taylor's work has been drawn, is a diagram of the exteriors of the two township Taylor retraced. (Fig. 4.33) There is no further information. They probably are copies of the diagrams made by Taylor to accompany his field notes, copies made by the clerks on the surveyor general's office.<sup>71</sup>

<sup>71</sup> I have included them to show that the surveying records include many items whose provenance is difficult to evaluate.

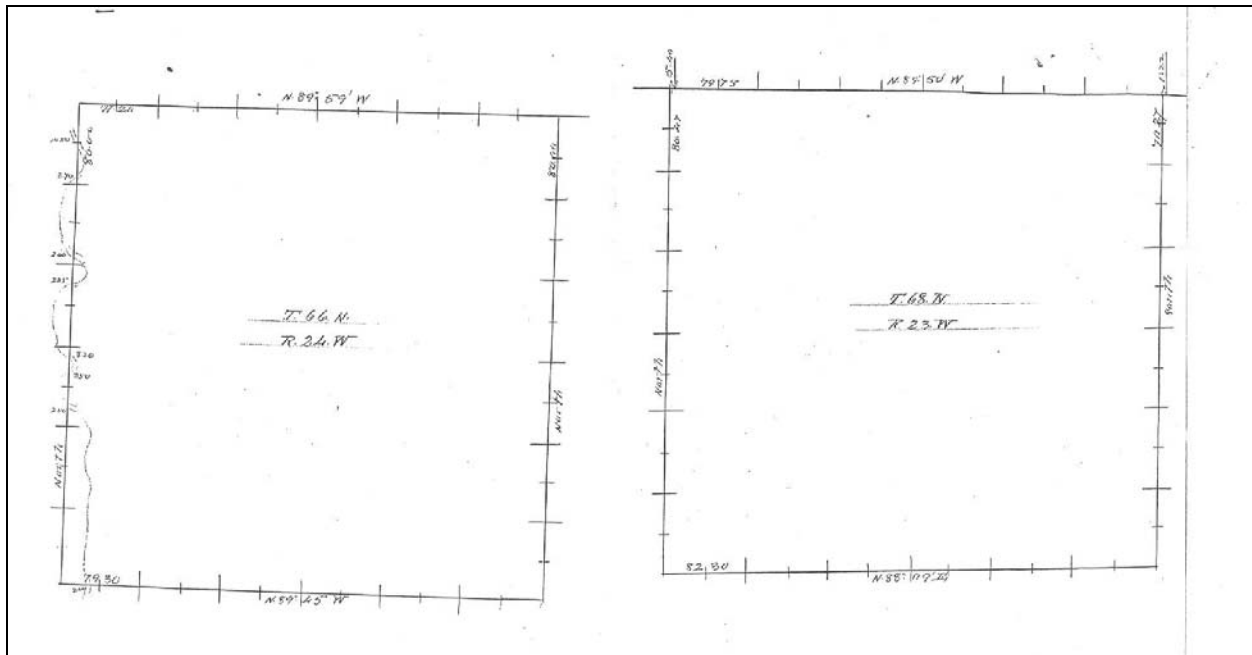


Figure 4.33 Diagram of exteriors of the townships retraced by Taylor. (Image from MHS collection. United States. Office of Surveyor General of Minnesota 2012c)

## Chapter 5. Conclusions and Recommendations

Building on earlier funded projects focused on the special instructions (Squires, 2008a) and the contracts awarded to the deputy surveyors located in the MHS collections (Squires, 2012) and my extensive work on the public land surveys in Minnesota (Squires, 2010) this report provides a detailed glimpse of the surveying process in Minnesota by describing the documentary evidence of the surveys carried out by a few deputy surveyors. It provides a snapshot of the varied documents that are available to illustrate the public land surveying process in Minnesota, a necessary step in the ultimate task of creating an electronic database of the surveying records. These documents illustrate, quite comprehensively, what particular deputies did in carrying out specific surveying contracts in Minnesota, some of which are available to anyone interested in the public land surveying process. (Fig. 5.1) Although comprehensive, the story of these surveys is incomplete, because the MHS collections do not contain all of the records to which reference is often made in the correspondence between the main players in the surveying process, the deputies, the surveyors general, and the Commissioner of the General Land Office. But perhaps attempting to give a complete picture of the public land surveying process in a sixty-year period, when the location of the administrative office of the surveys in Minnesota changed, by compiling a comprehensive inventory of every document generated in the process, is inappropriate. Many letters, particularly those sent by the surveyor general to the Commissioner of the General Land Office, make reference to accompanying documents. The fact that these documents existed at one time and perhaps still exist somewhere may, in many instances, be sufficient and there may be no need not see them. Scouring the Iowa archives, the National Archives, or even the Minnesota archives, for every document relating to the surveying process in Minnesota, which inevitably will be quite expensive, may not be worth the time and money, because it may not provide additional historical evidence of the surveying process. In addition, there is a reasonable expectation that some documents were inevitably misplaced or lost.<sup>72</sup> More importantly, perhaps, is the fact that each deputy possessed different experiences and skills when starting his contract, faced different challenges in his fieldwork and, most importantly, was allowed some discretion in completing his work. As a result, very few generalizations can be made about the public land surveys, at least on the basis of the documents described here, which clearly demonstrates that each surveying contract was unique. Collectively, the documents described here provide a reasonably complete picture of what a deputy did, and in doing so provides a template for the records informing the modern land surveyors, responsible retracing the lines and reconstructing and/or maintaining the corners established by the deputies, and the archivists, responsible for maintaining the surveying records and making them accessible.

The next step in the larger project, “the Virtual Field Guide to the Public Land Survey System,” comprising a digital database containing a collection of the public land survey records mentioned in this report for every corner monument and every line segment in Minnesota, is to construct such a database for one county and see if it is useful, not only for land surveyors but for others interested in using the surveying records to explore and reconstruct the past.<sup>73</sup>

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<sup>72</sup> I have seen some documents relating to the surveys in Iowa in private hands.

<sup>73</sup> Studying the public land surveying process has provided enough historical and geographical detail to fuel an academic career although I am puzzled why few others have looked at it. A worrying fact is the



<b>Record</b>	<b>Wiltse</b>	<b>Norris</b>	<b>Wright</b>	<b>Burt</b>	<b>Ralph</b>	<b>Taylor</b>
1. Oath, Contract and Bond.	X	X		X		
General Instructions.	X	X		X		
Special Instructions.	X	X		X		
Letter to Commissioner transmitting.	X	X		0		
Letter from Commissioner approving.	0	X		X		
2. Standard Line Field Notes.	X	X		X		
3. Letter to Commissioner transmitting.	X	X		0		
4. Oath, Contract and Bond.				X		
General Instructions.				X		
Special Instructions.				X		
Letter to Commissioner transmitting.				0		
Letter from Commissioner approving.				0		
5. Exterior Field Notes.				X		
Township Exterior Diagram.				0		
6. Letter to Commissioner transmitting.				0		
Letter from Commissioner acknowledging.				0		
7. Oath, Contract and Bond.			X		X	X
General Instructions.			X		X	X
Special Instructions.			X		X	X
Letter to Commissioner transmitting.			X		X	0
Letter from Commissioner approving.			X		X	X
8. Township Subdivision Field Notes.			X		X	0
Annotated Township Exterior Diagram.			0		0	0
9. Letter to Commissioner transmitting.			0		0	0
Letter from Commissioner acknowledging.			0		0	0
10. Plat Worksheet.	0	0	0	0	0	0
Original Township plat.	X	X	X	X	X	X
Commissioner's plat.	X	X	X	X	X	X
Register's plat.	0	0	0	0	0	0
Descriptive lists.	0	0	0	0	0	0
11. Letter to Commissioner transmitting.	0	X	X	0	0	0
Letter from Commissioner acknowledging.	0	0	X	X	0	0
12. Letter to Land District Register.	0	0	0	0	0	0

Figure 5.1 Records known to exist for the surveys described (some of which are not mentioned in this report) see Figure 2.1.<sup>74</sup> Shaded cells indicate records which do not apply to particular contracts. X – record seen for this report. 0 – record not seen for this report

Other needs include additional research in the State Historical Society of Iowa collections to acquire digital images of the contracts, bonds, and oaths of deputies working in Minnesota to

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diffidence with which modern land surveyors view the public land surveying process and the records of that process. It is startling, given the legal importance of the surveys, their relevance to modern land descriptions, and the need of the modern surveyor to look at some of the records. The question about whether knowledge of the public land surveying process will make them better surveyors seems axiomatic; such knowledge is the basis of their profession.

<sup>74</sup> There are more records associated with each surveying contract and described in the text than can be captured in a diagram.

complement the digital images of the correspondence already in my possession. (Squires, 2009b) In this effort there might be opportunities to coordinate and share expertise with the State of Iowa. This need is less pressing than trying to determine whether a database containing the surveying records is useful, because most deputies were awarded contracts, although some worked under “special” instructions, so the presence of other documents showing that they carried out surveys, such as field notes or plats, or references to contracts in a letters means that they had a contract, whether that contract exists in any collection or not.

Another need, but one that would be considerably more expensive than those already mentioned, would be to carry out further research in the National Archives to track down the documents, which are listed as being sent to the Commissioner General Land Office in various letters from the surveyor general to the Commissioner. Whether there are opportunities for coordinating and sharing expertise with federal agencies, such as the Bureau of Land Management, in this additional research is unknown.

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